Behavioural and Economic Factors Which Affect Compliance With Trucking Regulations

Ontario

Ministry of
Transportation and
Communications

Transportation
Technology and
Energy Branch

TRE-83-01

Behavioural and Economic Factors Which Affect Compliance with Trucking Regulations

IBI Group

In Association with
ARA Consultants

Prepared for
The Impact Assessment Office

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Published by
The Transportation Technology and Energy Branch
Ontario Ministry of Transportation and Communications
Honourable James W. Snow, Minister
H.F. Gilbert, Deputy Minister

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The Editor, Technical Publishing
Ministry of Transportation and Communications
1201 Wilson Avenue
Downsview, Ontario
Canada M3M 1J8

July 1983

Ministry of
Transportation and
Communications
Ontario

Technical Report Documentation Page

MTC Report Number TRE-83-01	ISBN Number	Other Document Number	Date July 1983

Title Behavioural and Economic Factors Which Affect Compliance with Trucking Regulations

Authors (name, title and/or organisation)

IBI Group

Published by The Transportation Technology and Energy Branch, MTC	Client Group
Participating Agencies	

Abstract

This report is an evaluation of the truck and inspection system. The report aims to analyse economic and behavioural factors and how they contribute to non-compliance with trucking regulations. Overall, the report will serve as a data base so that an assessment can be made of various options for the improvement of compliance rates.

Key Words Trucking, Regulations

Comments

Distribution

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TABLE OF CONTENTS

PAGE

LIST OF TABLES iv

EXECUTIVE SUMMARY v

1/ INTRODUCTION 1
1.1/ The Study Process 1
1.2/ Organization of the Report 2

2/ INITIAL RESEARCH 3
2.1/ Truck Population 3
2.2/ Conviction Statistics 4
2.3/ Development of Conceptual Model 7
2.4/ Preliminary Survey 8

3/ FOCUS GROUPS AND SURVEY METHODOLOGY 10
3.1/ Focus Group Design 10
  3.1.1/ Objectives 10
  3.1.2/ Participants 10
  3.1.3/ Structure. 11
3.2/ Focus Group Results 12
  3.2.1/ Weight Regulations 12
  3.2.2/ Dimension Regulations 14
  3.2.3/ Mechanical Fitness Regulations 14
  3.2.4/ Licensing Regulations 15
3.3/ Survey Methodology 16
  3.3.1/ Sampling Considerations 17
  3.3.2/ Sample Size 17
  3.3.3/ Statistical Analysis 19
  3.3.4/ Questionnaires 19
  3.3.5/ Interview Procedure 20
  3.3.6/ Respondents and Results. 20

PAGE

4/ ANALYSIS 22
4.1/ General Survey Results 23
    4.1.1/ North-South Differences 26
    4.1.2/ Bulk/Variety Differences 26
    4.1.3/ Public/Private Carrier Differences 27
4.2/ Weight Regulations 27
    4.2.1/ Existing Behaviour 27
    4.2.2/ Potential Effect of Various Actions on Compliance. . . 29
    4.2.3/ Appropriate Actions 30
4.3/ Dimension Regulations 31
    4.3.1/ Existing Behaviour 32
    4.3.2/ Potential Effect of Various Actions on Compliance. . . 34
    4.3.3/ Appropriate Actions 34
4.4/ Mechanical Fitness Regulations 35
    4.4.1/ Existing Behaviour 36
    4.4.2/ Potential Effect of Various Actions on Compliance . . 38
    4.4.3/ Appropriate Actions 39
4.5/ Vehicle/Driver Licensing Regulations 40
    4.5.1/ Existing Behaviour 40
    4.5.2/ Potential Effect of Various Actions on Compliance. . . 42
    4.5.3/ Appropriate Actions 43
4.6/ Comparative Analysis 44

5/ CONCLUSIONS 51
5.1/ Factors Influencing Compliance 51
5.2/ Relationship with Decision Model 54
5.3/ MTC Actions to Improve Compliance 55
    5.3.1/ Increasing the Penalty of Violation 55
    5.3.2/ Increasing the Probability of Being Detected 57
    5.3.3/ Assistance in Complying with the Regulations 58
5.4/ Further Research Requirements 59

APPENDIX A/ Focus Group Results 60

APPENDIX B/ Survey Results 79

APPENDIX C/ Survey Questionnaire 147

LIST OF TABLES

PAGE

1/ Truck Regulation Conviction Statistics 5

2/ Sampling Distribution 18

3/ Distribution of Survey Sample 21

4/ Knowledge of Complying with Regulations. 24

5/ Difficulty in Complying with Regulations 24

6/ Inspection/Detection on Major Highways 24

7/ Primary Responsibility for Ensuring Compliance 45

8/ Primary Reasons for Non-Compliance 47

9/ Primary Reasons for Compliance 47

10/ Ranking of Potential Actions 50

EXECUTIVE SUMMARY

The Ministry of Transportation and Communications has undertaken an overall evaluation of the truck and inspection system. Within this evaluation a number of individual studies have been commissioned. This is a report on one of these studies, dealing with an analysis of the behavioural and economic factors that affect compliance with trucking regulations. The specific project objectives were stated as follows:

- to identify the economic and behavioural factors contributing to non-compliance with trucking regulations;
- to establish the level of degree that the above factors contribute to non-compliance and compliance;
- to develop a data base so that the results of this study can be used to assess the effectiveness of various options for the improvement of compliance rates.

Initial Research

To develop the context for this study initial research was done on the population of trucks in Ontario, on the number and distribution of violations of truck regulations and on other factors relating to non-compliance. In addition, a conceptual "model" was developed to assist in the definition of the various types of non-compliance and the target groups for surveys.

Trucking offences under the Highway Traffic Act were grouped by the study team to four types or areas of concern:

- weight violations;
- licensing violations;
- dimension violations;
- equipment/mechanical fitness violations.

The majority of offences (over 60%) are in the area of weight regulations and most of these convictions are for violations of Section 72 of the Highway Traffic Act, exceeding axle weight limits. Violations of licensing regulations are the second most common type, accounting for approximately 20% of all convictions. Dimension and equipment and mechanical fitness violations account for approximately 15% of convicted violations. The large proportion of convictions in the weight category is a reflection of the inspection system which focusses on compliance with the weight regulations.

Conceptual Model

A conceptual model of how decisions with respect to compliance or non-compliance with trucking regulations are made was developed to explore reasons why trucking regulations might be violated. Three categories of violators were defined:

- those who are ignorant of the law and unknowingly contravene it;
- those who are aware of the laws or regulations but who are unaware that their vehicle and load are contravening a specific regulation; and
- those who knowingly contravene the regulations.

Survey Methodology

The first step in the development of a survey of the economic and behavioural factors affecting compliance in the trucking industry was a series of focus groups with participants from various sectors of the trucking industry. The objectives of the focus groups were to clarify who makes the decisions around compliance for different types of regulations; how these decision makers should be identified and contacted in a survey; how the trucking industry should be disaggregated for the purposes of the survey; and what important issues should be included in the survey questionnaire.

The results of the focus groups indicated that a telephone survey with a brief pre-coded questionnaire would be most suitable. A draft questionnaire was designed and pre-tested. The questionnaire was revised and administered to trucking firms from both northern and southern Ontario and from the bulk and general freight sectors of the industry.

Survey Results

The survey results provided information on the opinions of the trucking industry with respect to each group of regulations and the reasons for compliance and non-compliance with the regulations. The survey also obtained the reactions of the industry to possible actions aimed at improving compliance and identified those actions which in the opinion of the trucking industry would be most appropriate and effective in improving compliance with the regulations.

The survey results indicate that violators who are ignorant of the regulations are thought to be a relatively small group and, in the opinion of the respondents, account for 10-15% of all non-compliance. Violators who know the regulations but unknowingly violate them were thought to account for 30-50% of non-compliance. The key reason for violations of this type was identified as difficulty in judging compliance. In the opinion of the respondents, 40-65% of non-compliance is the result of knowing violations. The primary reasons for knowing non-compliance were identified as carelessness and the need to increase revenues.

Carelessness was sighted as the primary reason for non-compliance for all but the weight regulations. The non-weight regulations, dimensions, mechanical fitness and licensing, were not thought as difficult to comply with as the weight regulations and the probability of inspection and detection for violations of these regulations was perceived as being lower than the probabilities associated with the weight regulations.

MTC Actions to Improve Compliance

In general there appear to be three ways in which the MTC can improve compliance with trucking regulations. These are:

- increase the cost of being detected in non-compliance with the regulations;

- increase the perceived probability of being detected in such a violation;

- assist truckers in complying with the regulations.

The first two approaches address both economic and behavioral factors. Increasing the cost and probability of being detected in violation makes it less likely that revenues can be increased through non-compliance. Similarly, an increase in the cost and probability of detection makes carelessness an inappropriate attitude due to the potential penalties.

The third approach addresses the behavioral factor of "difficulty in judging compliance". In addition, assisting truckers in complying with the regulations makes it easier to be careful rather than careless and can help to promote an improved awareness of the objectives of the regulations and the need for them.

The specific actions which the respondents felt would be most effective in increasing compliance included:

- suspending licenses of consistent offenders;
- increasing fines for repeat offenders;
- having more MTC mobile inspection units;
- increasing the number of inspections;
- assisting truckers in determining compliance.

The last action listed was given a high rating primarily for weight regulations.

Further Research Requirements

The results of the survey of the attitudes and behaviour of the trucking industry with respect to trucking regulations have pointed out a number of areas where further research would be useful, including:

- obtaining an improved understanding of the dual authority of drivers and management in decisions on compliance;

- determining an equitable manner for setting increasing fines for repeat offenders;

- verifying if greater assistance should be provided to truckers and what form that assistance should take;

- determining what actions would be most effective in reducing the carelessness which was cited by many of the respondents as the primary reason for violations of non-weight regulations.

1/ INTRODUCTION

The Ministry of Transportation and Communications has undertaken an overall evaluation of the truck inspection system. Within this evaluation a number of individual studies have been commissioned. This is a report on one of these studies, dealing with an analysis of the behavioural and economic factors that affect compliance with trucking regulations. The specific project objectives were stated as follows:

- to identify the economic and behavioural factors contributing to non-compliance with trucking regulations;
- to establish the level of degree that the above factors contribute to non-compliance and compliance;
- to develop a data base so that the results of this study can be used to assess the effectiveness of various options for the improvement of compliance rates.

1.1/ The Study Process

The study was performed in four phases or steps:

- Background Research. Current literature on the subject was reviewed to determine if comparable research had been done and published in other jurisdictions. In addition a conceptual "model" was developed of how decisions to comply or not to comply with the trucking regulations are made. The distribution of different types of violations were analyzed in order to see if there were any discernable patterns of non-compliance. A draft survey form was also developed.
- Focus Groups. A number of focus groups were held with representatives of the trucking industry. The purpose of these focus groups was to confirm the identification of the various factors that were expected to effect compliance and to test the draft survey material that had been developed in the first phase.

- **Survey.** A comprehensive survey of persons active in the trucking industry was undertaken to determine their attitudes towards non-compliance and to obtain information as to the expected response to various measures that might be taken to improve compliance.

- **Analysis.** The results of the survey were analyzed and various conclusions reached.

1.2/ Organization of the Report

This report is the final report on this project. It is organized five sections as follows:

1/ Introduction;
2/ Initial Research;
3/ Focus Groups and Survey Methodology;
4/ Analysis of Results;
5/ Conclusions.

In addition there are three appendices as follows:

A/ Focus Group Results;
B/ Survey Results;
C/ Survey Questionnaire.

2/ INITIAL RESEARCH

To develop the context for this study initial research was done on the population of trucks in Ontario, on the number and distribution of violations of truck regulations and on other factors relating to non-compliance. In addition, a conceptual "model" was developed to assist in the definition of the various types of non-compliance and the target groups for surveys. The results of this initial work are reported on in this section.

2.1/ Truck Population

In 1978 the total number of commercial vehicles registered in Ontario was 771 018 (by 1981 this had increased to 1 075 075). However, many of these were light trucks and vans not normally subject to inspection. Some were also special purpose vehicles such as garbage trucks, hearses, and other vehicles that do not normally use the Provincial highway system to a great extent and are not normally inspected. The 771 000 commercial vehicles can be reduced to approximately 111 000 vehicles subject to inspection as follows:

Total Commercial Vehicles	771 018
Total Under 10 000 kg	654 514
Total Over 10 000 kg	116 504
Special Purpose Vehicles not normally inspected	5 239
Remaining Population	111 265

Of the remaining 111 000 vehicles another 37% were vehicles less than 15 000 kg, leaving approximately 70 000 vehicles over 15 000 kg, normally the subject of inspections. The largest single type of vehicle in this group are tractor units which, of course, can be combined with a wide variety of types of trailers.

In the same year there were approximately 48 000 public commercial vehicles licensed. These would be the vehicles of the "for hire" carriers. This figure includes vehicles of less than 10 000 kg in weight and also vehicles licensed in Ontario and at least one other Province.

2.2/ Conviction Statistics

In the year from April 1, 1978 to March 31, 1979 the Ministry obtained convictions for trucking offences under the Highway Traffic Act in 23 051 cases.* Table 1 breaks these down both by the type of offence and by the type of truck operation. The offences were grouped by the study team into four types or areas of concern:

- licensing violations;
- equipment/mechanical fitness violations;
- dimension violations;
- weight violations.

It can be seen that the majority of convictions obtained were violations of the weight regulations, representing 14 800 convictions or about 64% of the total. As can be seen from an examination of Table 2 most of the convictions were for violations of Section 72 of the Highway Traffic Act, exceeding axle weight limits. Another common violation was infractions of Section 77-1 of the Highway Traffic Act, exceeding the gross vehicle weight for which the truck was licensed and for which the fee had been paid. Violations of the licensing regulations were the second most common type with approximately 4400 convictions in the year examined. Dimension violations accounted for approximately 2900 violations. Equipment and mechanical fitness violations accounted for only 1012 convictions. The large proportion of convictions in the weight category is a reflection of the inspection system which focuses on compliance with the weight regulations.

The conviction statistics have been further broken down by the type of carrier involved, "for hire" carriers and private operators. The

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* Conviction Statistics, 1978-79

TABLE 1

TRUCK REGULATION
CONVICTION STATISTICS
(April 1, 1978 to March 31, 1979)

Section of Highway Traffic Act	For Hire Carriers			Private Carriers	Total
	Variety*	Bulk†	Total		
Licensing Violations					
6-1 Driving without a permit	95	36	131	2,399	2,530
61-1 Driving without the name of owner on the vehicle	63	119	182	756	938
8-1 Driving without correct number plates or permit validations displayed	143	68	211	450	661
Other (8-2, 9-1,14-1)	31	24	55	193	248
TOTAL	332	247	579	3,798	4,377
Equipment Violations					
57(a) Driving without a device showing that inspection requirements and performance standards have been complied with	15	162	177	396	573
39-3 Trailer with gross weight over 3,000 pounds not equipped with brake adequate to stop and hold vehicle	1	11	12	198	210
37 Violations of lamp rules	13	14	27	133	166
Other (39-1, 53)	2	2	4	65	69
TOTAL	31	189	220	792	1,012

TRUCK REGULATION
CONVICTION STATISTICS
(April 1, 1978 to March 31, 1979)

Section of Highway Traffic Act	For Hire Carriers			Private Carriers	Total
	Variety*	Bulk†	Total		
Dimension Violations					
65 Width/length/height violations	185	127	312	960	1,272
67 Improper loading	23	385	408	634	1,042
66-7 Operating vehicle contrary to special permit issued	133	65	198	349	547
Other (416,418,other)	-	5	5	16	21
TOTAL	341	582	923	1,959	2,882
Weight Violations					
72 Exceeding axle weight limits	1,917	2,386	4,303	4,949	9,252
77-1 Exceeding licensed gross vehicle weight	166	390	556	1,806	2,362
77-2 Not carrying vehicle licensed weight permit	117	158	275	809	1,084
74 Exceeding maximum allowable gross vehicle weight	142	319	461	601	1,062
Other (73, 75-3, 77-4, 77-5, 77-6, 78, others)	61	119	180	840	1,020
TOTAL	2,403	3,372	5,775	9,005	14,780
GRAND TOTAL	3,107	4,390	7,497	15,554	23,051

LEGEND: * A, H, K, L and X PCV licenses
† C, D, E, F, FF, FS, R and T PCV licenses

distribution is approximately two-thirds for private carriers and one-third for "for hire" carriers. The greatest deviation between the two types of carriers was found in terms of Highway Traffic Act licensing violations. Private carriers had 6 1/2 times as many licensing violations as did for hire carriers. By way of contrast, in terms of weight violation, the private carriers had only 1.6 as many violations.

The for hire carriers have also been broken down into two groups based upon whether they carry a variety of goods and less than truckload shipments or truckloads or bulk commodities. It can be seen that the bulk carriers seem to have a somewhat higher number of violations than do the "variety carriers".

2.3/ Development of Conceptual Model

The next step in the process was to develop a conceptual model of how decisions with respect to compliance or non-compliance with trucking regulations are made. The purpose of this exercise was to explore the decision-making processes to determine reasons why trucking regulations might be violated. Consideration led to the definition of the following three categories of violators:

- those who are ignorant of the law and unwillingly contravene it;

- those who are aware of the laws or regulations but who are unaware that their vehicle and load are contravening a specific regulation; and

- those who knowingly contravene the regulations.

Limiting the first type of non-compliance could be done by ensuring that the responsible decision makers are aware of all the relevant laws and regulations. Limiting the second type of violation could be achieved by either making the decision maker more aware of the regulations or by assisting them in determining the actual status of his vehicle and load.

Those who knowingly break the regulations are primarily doing so for economic gain. If the decision were made on strictly economic grounds, it would be decided to break the rules if the expected financial benefits were to exceed the total of the various expected costs. The financial benefits that might be considered might include such items as increases in revenues, using a vehicle that was available to carry a load rather than waiting for an appropriate vehicle, the benefits of satisfying customers' needs immediately or meeting production schedules and so forth. Various types of such benefits were defined to be included in the questionnaire development process. The costs that might be considered by the operator include the following:

- extra operating costs (wear and tear on vehicle, etc.);
- cost of being detected (down time, etc.) times the perceived probability of being detected;
- cost of being convicted (fines, etc.) times the perceived probability of being convicted;
- cost related to the size of the maximum penalty.

Increasing any of these costs or any of the probabilities would have the effect of deterring violations of this type. The last mentioned cost refers to the possible danger that a very large penalty could be imposed, one that the trucker could not afford to accept; it is analagous to the need for insurance to cover large losses. In addition to the economic costs listed above, the attitudes of the operator towards government regulations in general could influence his decision on whether or not to comply with the various trucking regulations.

This model was used to define the types of questions to be included in the survey. Draft questionnaires were prepared at this time.

2.4/ Preliminary Survey

The next step in the process was to do a preliminary survey of a small number of shippers, private truckers and for hire carriers. The purpose of this very preliminary survey was to determine who the decision makers were with respect to the various types of regulations. It was found that there was a very broad variety of assignment of responsibilities. For example, some common carriers depended upon the driver to enforce the weight regulations while others stated that the driver had very little responsibility in the matter, the dispatcher or the loading foreman bearing primary responsibility. Similarly, compliance with the dimension characteristics was mixed, with the driver bearing responsibility in many cases but, in other cases, it being the responsibility of more senior officials.

Mechanical fitness regulations were normally a joint responsibility of both the operators and the drivers. Vehicle licensing was primarily the responsibility of the owners.

The information gained in the preliminary survey indicated that there was a need to verify the preliminary conclusions with respect to:

- responsibility for compliance;
- the important factors considered in making compliance decisions;
- the most appropriate survey approach.

The preferred method of verifying these preliminary conclusions was to conduct a series of focus groups. The design and results of these focus groups are discussed in the next chapter. In addition, the survey methodology which was developed based on the results of the focus groups is described.

3/ FOCUS GROUPS AND SURVEY METHODOLOGY

3.1/ Focus Group Design

In this subsection, the design of the focus group sessions is discussed. First, the objectives of the sessions are presented, then the categories of participants sought for the focus groups are reviewed, and finally the structure of each individual session is outlined.

3.1.1/ Objectives

The objectives of the focus groups were to clarify the following issues:

- the compliance/non-compliance decision-making process: that is, who makes the decisions around compliance for the different types of regulations and what are the roles and job titles of these decision-makers;

- what are the best and most feasible mechanisms for identifying and contacting decision-makers for survey purposes;

- how can the trucking industry best be disaggregated in order to define groups which are homogeneous in their attitude of behaviour towards trucking regulations;

- what are the important issues/content items which should be included in the survey questionnaire.

The categories of participants sought for the focus groups and the structure of the focus group sessions were in response to the above objectives.

3.1.2/ Participants

In all, five focus group sessions were held during October and November, 1981. For four of the sections, participants were drawn on an industry sector basis. The four sectors which were represented included:

- public carriers who haul a variety of goods for various shippers. This group includes PCV operators with Class A, H, K, L and X licenses. It also includes public carriers who operate on a truckload or contract basis with a single shipper or receiver under license Classes C and D;

- public carriers who haul bulk commodities. This group includes public carriers who operate under license Classes E, F, FS, R, T and W;

- private carriers who haul a variety of goods. This group includes shippers who use their own fleets for most of their trucking requirements and who haul various types of loads using a variety of tractor trailor combinations;

- private carriers who haul bulk commodites. This group includes shippers who use their own fleets to transport bulk commodities such as stone and gravel, gasoline, liquids, concrete and other goods.

An attempt was made to draw participants from organizations of various sizes and different areas of specialty. Some of the job positions filled by the participants included Fleet Managers, Operations Managers, Traffic and Transportation Managers, and Presidents of companies.

The fifth focus group session which was held was attended solely by drivers. Some of these drivers worked on a contract basis for a single company while others drove their own tractors for a variety of firms.

3.1.3/ Structure

In order to ensure that the participants remained focused on pertinent issues during the sessions, and that sufficient time was spent by the participants on each issue, the focus group discussions were structured. Upon arrival at the session, each participant was asked to complete a short questionnaire. Responses to these questionnaires were aggregated and used to lead the discussions.

The questionnaire and subsequent discussion with the focus group participants addressed three basic questions:

- Which regulations are most difficult to comply with and why?

- Who in a company's hierarchy is responsible for decision-making around compliance?

- Which is the best method of surveying each decision-maker (e.g. telephone, mail, face-to-face interview)?

These three questions were repeated for each of the four groups of regulations (weights, dimensions, mechanical fitness and licensing).

3.2/ Focus Group Results

The results of the focus group discussions on each of the four categories of regulations are presented in this sub-section. This framework for presentation is used, as opposed to discussing the results of each session separately, since there was generally a concensus among all groups for each of the questions addressed. Those areas where there were differences of opinions are highlighted. A more detailed discussion of the results of the focus groups is contained in Appendix A.

3.2.1/ Weight Regulations

Virtually all participants were unanimous in agreeing that weight regulations were the most difficult to comply with. Generally, the opinion was that difficulties with weight regulations centered around axle weight limits and axle weight distributions. Some of the specific loads which often cause problems with axle weight limits included:

- bonded containers since public carriers have no control over their loading;

- tank trailers since the tanks often have multiple compartments for different products and it is difficult to estimate the weight distribution; and

- situations where trailers are loaded by others and incorrect information is given on the weight of the load.

There was no overall concensus on whether or public or private companies were more likely to violate weight regulations. It was felt that to some extent, private companies have more consistent loads and are therefore more aware of the weights of those loads. On the other hand, the public companies have to defend their licenses and therefore they cannot afford to consistently violate the regulations. In either case, it was felt that atitudes towards compliance with weight regulations were related to the attitudes of senior management which infiltrated down through the company. For both private and public carriers, there was a general argument that if their units were constantly overloaded, equipment problems may result which in the long run would cost more than the benefits gained by a violation.

The following job positions were identified as having responsibility for compliance with weight regulations:

- the dispatcher, who is responsible for selecting the type of equipment used;
- the operations or traffic manager, who usually oversee the dispatcher;
- the dock supervisor who decides how the truck should be loaded;
- the driver.

There was some difference in opinion as to the order of importance of this list with respect to weight regulations. Dispatchers and traffic managers were identified most often as having responsibility for ensuring compliance except in the case of drivers who indicated that this responsibility rested with themselves.

The participants tended to agree that mailed and telephone questionnaires would be inappropriate for reaching either drivers or dispatchers. They thought that the best method would be a face-to-face interview. If the survey were to address individuals above the level of dispatcher, the respondents thought that a mail or telephone survey could probably be used.

3.2.2/ Dimension Regulations

Most groups felt that on the whole dimension regulations did not pose a major problem. There is some difficulty in meeting the different Provincial and U.S. standards, but this was not cited as a very important issue. Some participants felt that steel and forest product carriers would have more problems with dimension regulations than they were having.

The general opinion expressed by the focus groups was that the main decision-makers affecting compliance with dimension regulations are the traffic manager and/or equipment manager who specify the characteristics and dimensions of equipment to be purchased. It was felt that the best way to survey these people would be by telephone or by mail survey.

3.2.3/ Mechanical Fitness Regulations

Participants from both public and private carriers felt that their companies had nothing to gain by violating mechanical fitness rules. Companies have an interest in getting the best use out of their trucks, and therefore most have regular preventive maintenance programs. There was a mixed reaction to mechanical fitness inspections of vehicles at their own terminals by the MTC. Some participants felt that these inspections were very thorough and saved them the cost of having their own mechanics do a fitness test. Others felt that Ministry inspectors were just novices and were not qualified to do a mechanical fitness test. Similarly, there was a mixed reaction to a proposed new law on mechanical fitness which would require that all trucks be subject to periodic authorized safety checks. Some participants were of the opinion that this would result in government over-regulation or overkill. Others thought that this procedure would add to the cost of inspection and result in private garages accepting bribery in order to have a vehicle certified as safe. Some of the larger private firms advocated compulsory safety checks and did not feel that such a regulation would open the door to unscrupulous safety practices.

Both public and private carriers felt that the most difficult area regarding mechanical fitness was the lack of clear guidelines for compliance with the regulations. In addition, it was felt that some of these regulations are arbitrary and that the approaches taken for the mechanical fitness inspection of trucks are not consistent. Some of the participants from public bulk carriers also felt that items, such as wear and tear, were completely uncontrollable factors. For example, a truck could be sent out as mechanically fit and experience a failure in its light enroute to its destination. There is no way of controlling for this kind of contingency.

Most of the focus groups indicated that the key decision-makers with respect to mechanical fitness regulations were either the mechanic or the maintenance manager. Drivers were also identified as having some responsibility in ensuring that mechanical fitness regulations are complied with since it is up to the driver to detect and report vehicle problems during the intervals between regular safety inspections. Participants from public carriers which haul mixed loads identified dispatchers as being responsible for ensuring that dispatched vehicles complied with mechanical fitness regulations.

The focus group participants agreed that telephone or mail surveys would probably be appropriate for questionnaires addressed at maintenance managers or their equivalents. For questionnaires addressed at mechanics or drivers, it was felt that face-to-face interviews would be the best approach to take.

3.2.4/ Licensing Regulations

In general, it was thought that licensing regulations were not very difficult to comply with when compared to weight regulations. Violations of licensing regulations were often attributed to either a clerical or managerial error. In addition, some problems occurred not as a result of the lack of permits or licenses, but rather as a result of violations of permit conditions, e.g. lack of signs, lack of flags, etc. Another type of licensing regulation which causes some problems is that of driver violations. Presently, abstracts of a driver's violations are sent to his employer every six months. It was felt that this time period is too long to permit the company to reprimand the driver.

In terms of the main decision-makers, the general opinion was that it was up to driver to check and make sure that he had all necessary permits and it was up to the licensing clerk in the company to obtain these permits. One group which did not concur with this ordering of decision-makers were the participants from private mixed carriers who felt that managers and not drivers were responsible for ensuring that appropriate paper regulations were on board.

It was suggested that the best way to survey the drivers would be to go to truck stops. It was indicated that this approach may result in problems if the questionnaire is too long since drivers are only allowed fifteen minutes per stop. Once again, in terms of surveying managers, it was felt that a telephone or mail survey would be appropriate.

3.3/ Survey Methodology

The focus groups had indicated that only short (i.e. ten minute) surveys would be feasible for many of the key decision makers or actors in the trucking industry who are responsible for decisions with respect to compliance.

The focus groups also indicated two further important considerations:

- surveys requiring long written responses would not be well received;
- with the exception of the smaller companies, decision making was highly specialized and compartmentalized even within the same company, i.e. different people were responsible for decision making depending on which type of regulation (weight, dimensions, maintenance or licensing) was involved.

Taking all these considerations together, a telephone survey with a brief pre-coded (checklist) questionnaire was indicated.

A draft instrument was designed and pre-tested (face to face) in December 1981. A revised telephone interview version was drafted and pre-tested (by telephone) in January 1982.

3.3.1/ Sampling Considerations

There were two geographical populations to be considered - Northern Ontario and Southern Ontario. In order to be compatible with definitions of North and South used in other Ministry of Transportation and Communications studies, we used the line of the Severn-Trent-Rideau Waterway System as the demarcation line.

The focus groups had indicated that there were possible significant differences in the ease with which different types of carriers could comply with the various regulations. In particular, bulk carriers seem to have different types of problems and pressures than variety carriers.

Since the focus groups had also shown that decision making around compliance was highly specialized, the sampling implications were that key actors in each of the four regulation areas (weight, dimensions, mechanical fitness and licensing) would have to be selected (randomly) and asked only those questions which fell within their own knowledge and competance.

3.3.2/ Sample Size

In the terms of reference, a sample size of 500 was proposed as reasonable both in terms of cost, and in terms of the level of sampling error which can be tolerated in a study of this kind. Based on a sample size of 500, a north/south split, a variety goods versus bulk goods split, and a four-way categorization by regulation type, we developed a sampling distribution as outlined in Table 2 below.

TABLE 2

SAMPLING DISTRIBUTION

REGULATION CATEGORY	EMPLOYEE CATEGORY	NORTH (200) Variety (100)	NORTH (200) Bulk (100)	SOUTH (300) Variety (150)	SOUTH (300) Bulk (150)
WEIGHT	Dispatchers/Managers	9	9	25	25
	Dock Supervisors/Shippers	8	8	25	25
	Drivers	8	8	25	25
DIMENSIONS	Traffic/Equip. Mgr. Dispatcher	13	13	12	12
	Drivers	12	12	13	13
MECHANICAL FITNESS	Maintenance Mgr.	9	9	9	9
	Mechanic	8	8	8	8
	Driver	8	8	8	8
LICENSING	Driver	9	9	9	9
	Licensing Clerk	8	8	8	8
	Maint/Op/Traff. Mgr.	8	8	8	8

- Dispatcher = Traffic Manager
- Shipper = Dock Supervisor

Each cell in this table contains the key actors identified during the focus groups as having the greatest impact on compliance or non-compliance decision making for that cell. Most cells contain three key actors but, for the dimensions regulations, only two key actors were identified. Each type of actor in each cell was surveyed.

In constructing the cells we assigned a weighting, for study purposes, to the importance of the regulations. Specifically, weight violations account for about two-thirds (65%) of all violations. A quota sampling procedure based on the frequency of violation occurrence might have been used but this would have left some regulation types, e.g. mechanical fitness, with insufficient numbers for reliable statistical analysis. Instead, we designed our sample so that weight regulations had double the number of respondents of each of the other three types of regulation.

3.3.3/ Statistical Analysis

With a sample size of 500 the criterion level of accuracy has a 90% level of confidence with an error permissible of ±4%. Inter-group comparisons are possible with up to a minimum of 100 respondents. This implies a possible reduction in accuracy from ±4% with a 90% degree of confidence to ±8% (for groups of 100 respondents). These figures are in the acceptable range for projects of this nature. This allows analysis involving comparisons among the following sub-groups:

- by region, north versus south;
- by commodity type, variety versus bulk;
- region by commodity.

Any inter-group comparisons involving individual cell sizes of less than 100 will have associated errors greater than those cited above.

3.3.4/ Questionnaires

A copy of all of the questionnaires used in the survey of factors influencing compliance with trucking regulations in Ontario is contained in Appendix C. Separate questionnaires were developed for each of the four groups of regulations. Each questionnaire had a common initial section which collected information on company type, knowledge of trucking regulations, and opinions on the difficulty of complying with the different categories of regulations. The remainder of the questionnaires differed as to subject area but were generally similar in format. For each of the categories of regulations, questions were asked on:

- responsibility for ensuring compliance;
- relative difficulty of compliance;
- reasons for difficulty of compliance;
- perceived probabilities of inspection, violation and detection;
- problems resulting from the detection of violations;
- reasons why violations occur;
- reasons why compliance occurs;
- possible effect of actions aimed at increasing compliance;
- the perceived prevalence of knowing non-compliance with the regulations.

3.3.5/ Interview Procedure

We prepared two lists of firms to contact, those who are hauling a variety of goods, and those who are hauling bulk commodities. A list was prepared for both the Northern and Southern Regions.

Telephone interviewers then called attempting to fill the cells in Table I. The focus groups and pre-tests had demonstrated that job titles were interchangeable and were not always consistent from company to company. We decided, therefore, to identify respondents by job function rather than title and we developed identification questions which were used to direct us to qualified respondents. For example, in order to identify dispatchers, the following question was asked:

> "We'd like to talk to the person who is responsible for the assigning or dispatching of your trucks or tractor trailers to specific roads or routes."

Similar questions were used for the other job functions.

3.3.6/ Respondents and Results

Some of the characteristics of the respondents to the questionnaires associated with each of the four categories of regulations are presented in Table 3. In general, responses were obtained from a broad cross-section of the trucking industry. There was representation from carriers operating in both Northern and Southern Ontario; public and private carriers; small, medium and large companies; and a wide variety of goods.

TABLE 3

DISTRIBUTION OF SURVEY SAMPLE

	Weight Regulations	Dimensions Regulations	Mechanical Fitness Regulations	Licencing Regulations
No. of Respondents	160	82	81	86
Geographic Distribution				
Northern Ontario	25%	49%	52%	49%
Southern Ontario	75%	51%	48%	51%
Type of Carrier				
For Hire	56%	46%	70%	57%
Private Carriers	44%	54%	30%	43%
Type of Operation				
Bulk	50%	52%	49%	52%
Variety	50%	48%	51%	48%
Job Description of Respondent				
Drivers	33%	49%	30%	33%
Traffic/Operations	33%	51%	-	-
Dock personnel	33%	-	-	-
Maintenance Mgr.	-	-	35%	-
Mechanic	-	-	36%	-
Licensing Clerk/Mgr.	-	-	-	30%
Respondents' Years Worked in Trucking Industry				
1-5	16	6	12	15
6-10	17	24	14	15
11-20	31	27	33	40
20+	36	42	41	30
Refuse	-	1	-	-

4/ ANALYSIS

This chapter presents the findings of the analysis of the survey results for each of the four groups of regulations. The analysis provides a general assessment of the attitudes and behaviour of the trucking industry towards the different regulations and does not include any statistical examination of the results.

It should be noted that the data collected represented the opinions of those interviewed and therefore reflect their perceptions, not actual facts. In the analysis of compliance, however, perception plays a large role and therefore it is as important to understand perceptions as well as truths.

The survey results were analyzed with the objectives of:

- examining the opinions of the trucking industry with respect to each group of regulations and the reasons for compliance or non-compliance with the regulations;
- obtaining the reactions of the industry to possible actions aimed at improving compliance and identifying the key decision makers within trucking firms with respect to each group of regulations;
- identifying those actions which in the opinion of members of the trucking industry would be most appropriate and effective in improving compliance with the regulations.

The results of the analysis are presented in six sections. The first section presents some comparative data across all of the regulation categories while the next four sections each deal with one of the four groups of regulations. The objectives listed above provide the framework for the presentation of results within the latter four sections. The final section presents a comparative analysis of some of the key findings. In addition to the material presented in this chapter, more detailed information on the survey results is contained in Appendix B. The information provides additional insight into a number of areas which are only briefly covered in this chapter.

4.1/ General Survey Results

As indicated in the previous chapter, separate questionnaires were developed for each of the four groups of regulations. However, in each questionnaire the respondents were asked about their knowledge of the different categories of trucking regulations and the difficulty of complying with these regulations.

Generally, all respondents felt that their knowledge of all categories of regulations was relatively high (Table 4). As might be expected, since the different questionnaires were generally addressed to individuals responsible for the different categories of regulations, their reported knowledge of regulations tended to be highest for the category of regulations covered by the questionnaire.

As shown in Table 5, weight regulations were identified by the largest percentage of respondents as being difficult to comply with. The dimensions category was ranked next in terms of difficulty, followed by the mechanical fitness and licensing regulations.

Weight regulations are the most visible group of regulations and MTC enforcement practices are closely related to these regulations. Approximately 56% of the respondents stated that most of the violations received by their companies in the past two years fell into the weight category. In comparison, only 5% of the respondents said most violations were in the dimensions category, 5% in the mechanical fitness category and 3% in the licensing category. The remaining respondents stated that their companies had no violations in the past two years (23%) or that they did not know into which category most violations fell.

The survey included a series of questions on the probability of inspection, violation detection and on the frequency of violations for each of the different regulation categories. The respondents were asked:

- "Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for (each regulation category) at an inspection station in Ontario during the trip?"

TABLE 4
KNOWLEDGE OF REGULATIONS
Percent of Respondents Who Feel They Know Regulations Very Well or Fairly Well

QUESTIONNAIRE	REGULATION CATEGORY				
	Weight	Dimensions	Mechanical Fitness	Vehicle Licensing	Driver Licensing
Weight	87	78	75	76	85
Dimensions	88	90	89	90	95
Mechanical Fitness	75	73	91	70	76
Licensing	86	75	81	90	95

TABLE 5
DIFFICULTY IN COMPLYING WITH REGULATIONS
Percent of Respondents Who Thought Regulations Were Difficult to Comply With

QUESTIONNAIRE	REGULATION CATEGORY				
	Weight	Dimensions	Mechanical Fitness	Vehicle Licensing	Driver Licensing
Weight	39	16	9	7	5
Dimensions	26	19	3	6	1
Mechanical Fitness	41	26	18	13	5
Licensing	43	12	17	4	5

TABLE 6
INSPECTION/DETECTION ON MAJOR HIGHWAYS

	REGULATION CATEGORY			
	Weight	Dimensions	Mechanical Fitness	Licensing
Perceived Frequency of Violations	16.6	10.7	27.9	12.8
Perceived Percent Inspected	47.8	22.4	21.5	20.5
Perceived Percent Detected	49.8	44.0	35.4	25.7
Implied Detection Rate as Percent of All trips	4.0	1.0	2.1	0.7

- "Assuming 100 trucks on average trips are in violation of the (each catagory) regulations, how many trucks out of 100 would you say are likely to be detected at an inspection station in Ontario as being in violation of the (each category) regulations?"

- "Once again, assuming 100 trucks on average trips, how many would you think would be in violation of (each category) regulations?"

Table 6 presents the perceived frequency of violation, inspection and detection for each of the four categories of regulations. In addition, the detection rate as a percent of all trips implied by the perceptions of the respondents is also presented. The overall detection rate for weight regulations was estimated as follows:

- Assuming that 100 trucks were travelling on average trips in Ontario, 16.6 would be in violation of the weight regulations;

- Of the 16.6 in violation, 47.8% or 7.9 trucks would be inspected;

- Of the 7.9 trucks which are both in violation and inspected, 49.8% or 4.0 trucks would be detected to be in violation of the weight regulations.

The same approach was used to estimate the implied detection rates as a percent of all trips for the other regulation categories. The implied detection rates should be viewed with caution since the three questions were not grouped together and asked as a sequence in the questionnaire. Therefore, it is possible that some of the respondents may have been thinking of detection rates when they responded to the inspection question and visa versa.

It can be noted that the perceived rate of inspection for weight regulations is more than twice as large as the rate for any of the other categories. This is consistent with MTC enforcement practices which centre on weigh scale operations. The perceived rates of detection also highlight the emphasis of the enforcement practices on weight regulations.

In the respondents' opinion the mechanical fitness regulations are most frequently violated, followed by weight, licensing and dimension regulations. The perceived violation rates, which range from 27.9% to 10.7%, are substantially higher than the violation rates identified in the "Truck Compliance Study" undertaken by Read, Voorhees and Associates Ltd. for the Ministry of Transportation and Communications. In that study, violation rates were in the order of 5% to 10%.

4.1.1/ North-South Differences

Some distinctions can be noted between responses made by those surveyed in the north and those in the south. This is particularly the case for attitudes to weight violations. For example, in the north, avoiding down-time at an inspection station was considered to be the primary reason that companies try to comply with weight regulations; whereas, in the south, the primary reason is avoiding fines.

Given the much smaller number of respondents in the north, we have to treat this data somewhat cautiously. There is certainly not sufficient evidence to prove significant differences but there is sufficient evidence to suggest the need for further research. Differences in the north-south samples can be seen in the percentages estimating that various measures would have no effect in increasing compliance with weight regulations.

EFFECTIVENESS OF MEASURES
North-South Differences

	% "No Effect"	
	North (n=50)	South (n=150)
Changing hours of inspection	23	47
Clearer information on MTC weight regulations	23	39
More available information on MTC weight regulations	25	44
Longer down time in MTC inspection station	55	39
More MTC mobile inspections units	38	24

4.1.2/ Bulk/Variety Differences

In general, there were no significant differences in the responses of bulk and variety carriers. However, a trend was noticeable in their attitudes to what effect various measures would have on compliance with weight regulations. Whatever measure was presented, a greater percentage of bulk carriers than of variety were likely to say that the measure would have no effect. This trend was particularly noticeable when they were responding to the effect that "increasing number of inspections" and "changing hours of inspection" would have on compliance with weight regulations.

4.1.3/ Public/Private Carrier Differences

No significant differences were observed between responses of public and private carriers.

4.2/ Weight Regulations

The survey questions concerning weight regulations were completed by 160 respondents. The characteristics of the respondents are described in Appendix B.

4.2.1/ Existing Behaviour

As discussed in Chapter 2, violations can be divided into three groups: those which result from ignorance of the regulations, those which result from unknowing violations of known regulations, and those which are willful violations. Only 3% of the respondents indicated that they do not know the weight regulations at all and an additional 10% indicated that they do not "know them too well". It is unlikely that this group accounts for more than a small proportion of the violations since they would gain knowledge of the regulations as soon as they are detected to be in violation of them.

One quarter of the respondents said yes when asked if over the past year someone in their company had knowingly decided not to comply with weight regulations. On average, this group indicated that willful violations were thought to represent approximately 10% of their company's total violations of weight regulations.

In another question, the respondents were asked their opinions as to the reasons as to the occurrence of weight violations. These opinions were used to estimate the proportion of violations associated with each of the three groups of violations, and the results were as follows:

Primary Reasons for Violation (Weight)	Percent of Violations	Percent of Loads
1) Ignorance of the law - legislation difficult to understand - lack of knowledge of MTC weight limit	10%	1.7%
2) Unknowing violation of known laws - difficulty in judging load distribution - lack of necessary weighing equipment - shifting weight on route - nature of load - incorrect waybills - weather	52%	8.6%
3) Knowing violations - need to increase revenue - carelessness - lack of appropriate vehicle - shippers requirements	38%	6.3%
	100%	16.6%

The reasons given for violation of the regulations can be contrasted with the reasons why companies try to comply with weight regulations. These latter reasons can be divided into three groups as follows:

Reasons for Compliance (weight)	Percent of Reasons Given	
1) Avoid negative consequences within MTC control:		
- avoid fines	28%	
- avoid down-time at MTC inspection station	10%	
- avoid record of violation	6%	
- avoid threat to license	2%	
		46%
2) Avoid negative consequences within company control:		
- avoid wear and tear on vehicles	9%	
- reputation	6%	
- economic	3%	
		18%
3) Positive reasons:		
- desire to be law abiding	24%	
- safety	12%	
	36%	

It is interesting to note that of the reasons given for compliance, less than half can be classified avoiding negative consequences within MTC control. Furthermore, the reasons given for non-compliance by the respondents indicate that less than 40% of the violations are willful.

The differences between the responses of those who were aware of knowing non-compliance with weight regulations in their companies and those who were not aware of such knowing non-compliance indicate that a number of different strategies may be required to improve compliance with weight regulations across the trucking industry. "Need to increase revenue" was identified as the primary reason for weight violations by 39% of the knowing non-compliance group, as compared to 13% of the others. Similar percentages of each group said avoiding fines was a primary reason for trying to comply with weight regulations. However, 32% of the group without knowing violations said that the "desire to be law-abiding" was the primary reason for compliance, while only 20% of those with knowing violations gave this reason.

4.2.2/ Potential Effect of Various Actions on Compliance

A detailed summary of the respondents' opinions concerning the effect that various actions might have on compliance with weight regulations is contained in Appendix B. The actions which were rated as having the greatest potential effect on compliance are listed below, along with the percentage of respondents who indicated that the actions would increase compliance either greatly or somewhat.

	Action (weight)	Greatly Increase Compliance	Somewhat Increased Compliance
1.	Suspending licenses of consistent offenders	66%	22%
2.	Increasing fines for repeat offenders	40%	46%
3.	Assisting truckers in determining weights at time of loading	34%	40%
4.	Doubling costs of fines	26%	45%
5.	Increasing number of inspections	26%	44%
6.	Having more mobile inspection units	26%	44%

Three of the six actions ranked as having the greatest potential impact on compliance would increase the cost of being detected in violation of the weight regulations. Two of the actions would increase the probability of being inspected and therefore detected. The remaining action is a positive one which would help reduce the number of unknowing violations.

In order to be most effective, these actions would have to be addressed at or publicized to the individuals within the trucking industry who have responsibility for insuring compliance with weight regulations. However, there are difficulties in this area since there is a lack of consensus as to who has the primary responsibilty of insuring compliance. Of the drivers interviewed, 79% said that drivers have primary responsibility while only 13% of the respondents classified as "dispatchers" and 22% of the "dock supervisors/shippers" placed primary responsibility with the drivers.

4.2.3/ Appropriate Actions

As indicated earlier, the MTC could take three different types of action aimed at increasing compliance with weight regulations. Key characteristics of appropriate actions within each type are discussed below.

Increasing the Cost of Non-compliance

Survey responses indicate that increased fines and other financial impacts such as suspending licenses would be effective in increasing compliance with weight regulations. However, the key characteristic of the measures judged most effective is that the cost of non-compliance should increase for repeat or consistent offenders. An approach which could be taken would be to increase the minimum fine for over-loading as a function of the number of violations.

Increasing the Probability of Detection

This type of action is a more direct deterrent than the previous type although it was ranked as having a potentially smaller effect on compliance by the survey respondents. Since these actions are not expected to pay for themselves in terms of increased fines, it is most effective to implement them in areas where the existing levels of overloads have a costly impact on road and bridge maintenance. In addition, the effectiveness of the actions can be magnified if they are well publicized within the trucking industry.

Increasing the Capabilities of Truckers

Thirteen percent of the survey respondents indicated that weight regulations are very difficult to comply with. A further 26% stated that the regulations are somewhat difficult to comply with. These percentages are substantially higher than for any of the other types of regulations; therefore, actions aimed at reducing the difficulty in complying with the regulations (without changing the regulations) may be highly effective. For example, in areas where trucking terminals are concentrated, it may be appropriate to locate free public weigh stations that are not regular MTC inspection stations. It may be possible to make these stations automatic and unmanned, thereby reducing the operating cost. Training programs or publications which instruct drivers as to the effect of loading distributions on axle weights are other actions which could be taken to improve the capabilities of the trucking industry to deal with weight regulations.

4.3/ Dimension Regulations

The questionnaire concerning dimension regulations was completed by 82 respondents. The characteristics of the respondents and a detailed summary of the results of this questionnaire are contained in Appendix B.

As was the case with the respondents to the weight questionnaire, a large proportion of the respondents to the dimensions questionnaire indicated that most of the violations their companies had received in the past two years fell into the weight category. Only one quarter as many respondents indicated that most of the violations fell into the dimensions category. However, the average of the respondents' opinion is that one out of ten loads (10.7%) are actually in violation of the dimension regulations.

4.3.1/ Existing Behaviour

It is unlikely that a substantial proportion of the violations against dimension regulations are the result of ignorance of the law. Only 2% of the survey respondents indicated that they did not know the regulations at all, while an additional 9% indicated that they did not know the regulations too well. These values are consistent with the fact that 10% of the respondents indicated that the primary reason that most violation of dimensions regulations occur is a lack of knowledge of MTC dimension regulations.

The set of responses on the primary reasons for the occurance of dimension violations was used to estimate the proportion of violations associated with each of the three groups of violations: ignorance of the law, unknowing violation of known laws, and knowing or willful violation. The results of this analysis are summarized in the table below:

	Primary Reasons for Violation (Dimensions)	Percent of Violations	Percent of Loads
1)	Ignorance of the law - lack of knowledge of MTC dimension regulations - legislation difficult to understand	13%	1.4%
2)	Unknowing violation of known laws - difficulties in measuring dimensions - nature of load/shifting cargo - equipment manufacturer's error - inconsistent measurement/ inspection practices	27%	2.9%
3)	Knowing violations - carelessness - need to increase revenue - shippers' requirements - lack of appropriate vehicle - obtaining special permits	60%	6.4%
		100%	10.7%

The table above also indicates how the estimated 10.7% of loads which are in violation of the dimensions violations are distributed among the three types of violations.

The table above also indicates how the estimated 10.7% of loads which are in violation of the dimensions violations are distributed among the three types of violations.

The reasons given for the violation of dimension regulations can be contrasted with the reasons why companies try to comply with these regulations. As was the case with the weight regulations, the latter reasons can be divided into three groups as follows:

	Reasons for Compliance (Dimensions)	Percent of Reasons Given	
1)	Avoid negative consequences within MTC control:		
	- avoid fines	22%	
	- avoid downtime at MTC inspection station	9%	
	- avoid record	11%	
	- threatens license	3%	45%
2)	Avoid negative consequences within company control:		
	- reputation	10%	
	- other reasons	7%	17%
3)	Positive reasons:		
	- desire to be law abiding	22%	
	- safety	16%	38%
			100%

The distribution of the reasons given for compliance with dimension regulations matches the distribution associated with weight regulations very closely. As was the case with weight regulations, less than half the reasons given for compliance can be classified as avoiding the negative consequences within MTC control.

4.3.2/ Potential Effect of Various Actions on Compliance

A detailed summary of the respondents opinions concerning the effect that various actions might have on compliance with dimensions regulations is contained in Appendix B. The actions which were rated as having the greatest potential effect on compliance are listed below, along with the percentage of respondents who indicated that the actions would increase compliance either greatly or somewhat:

	Action (Dimensions)	Greatly Increase Compliance	Somewhat Increased Compliance
1.	Suspending licenses of consistent offenders	71%	26%
2.	Increasing fines for repeat offenders	40%	56%
3.	Doubling the cost of fines	26%	46%
4.	Increasing the number of inspections	24%	50%
5.	Having more mobile inspection units	20%	54%
6.	Assisting truckers in determining dimensions at time of loading	18%	42%

The six actions ranked as having the greatest impact on compliance with dimension regulations are the same as the top six actions associated with weight regulations. In terms of ranking, "suspending licenses of consistent offenders" and "increasing fines for repeat offenders" are first and second for both categories of regulations. The rank order of the remaining actions differs between the two regulation categories.

4.3.3/ Appropriate Actions

As was the case with the weight regulations, the MTC could take three different types of action aimed at increasing compliance with dimension regulations. Key characteristics of appropriate actions within each type are described below:

Increasing The Cost of Non-Compliance

Actions of this type were judged by the respondents as being the most effective measures in terms of increasing compliance. Since the cost of implementing these actions is likely to be relatively low, they appear to be highly appropriate. Once again, a key characteristic of the measures judged as most effective is that the cost of non-compliance should increase for repeat or consistent offenders.

Increasing the Probability of Detection

These types of actions were also judged to be effective in increasing compliance. The benefits to the MTC of implementing such actions would be related to decreasing the negative impacts which over-dimension loads can have on regular vehicular traffic. Therefore, these actions should be implemented in areas where the negative impacts are the greatest. Since decisions on compliance with regulations are based to some extent on the perceived probability of detection, the actions should be well publicized within the trucking industry in order to maximize their effectiveness.

Increasing the Capabilities of Truckers

Only four percent of the respondents indicated that dimension regulations are very difficult to comply with, while a further 15% stated that the regulations are somewhat difficult. The most common reason given for difficulty in complying with dimension regulations was "difficulty in measuring dimensions". In the opinion of the survey respondents, the "assisting of truckers in determining dimensions at the time of loading" would increase compliance with regulations. This specific action could be difficult and costly to implement; however some MTC assistance, perhaps through training programs or publications which deal with all of the regulations, may be appropriate and effective in improving compliance with dimension regulations.

4.4/ Mechanical Fitness Regulations

The questionnaire concerning mechanical fitness regulations was completed by 81 respondents. The characteristics of the respondents and a detailed summary of the results of this questionnaire are contained in Appendix B.

4.4.1/ Existing Behaviour

Based on the responses to the different questionnaires, it appears that knowledge of mechanical fitness regulations is not as thorough as knowledge of the other regulations. Nine percent of the survey respondents indicated that they did not know the regulations at all, while an additional 16% indicated that they did not know the regulations too well. These responses conflict with the reasons given for the occurance for mechanical fitness violations, since "lack of knowledge of MTC regulations" was not mentioned by the respondents.

The set of responses on the primary reasons for the occurance of mechanical fitness violations was used to estimate the proportion of violations associated with each of the three groups of violations: ignorance of the law, unknowing violation of known laws, and knowing or willful violation. The results of this analysis are summarized in the table below. The table also indicates how the estimated 27.9% of the trucks which are in violation of mechanical fitness regulations are distributed among the three types of violations.

Primary Reasons for Violation (Mechanical Fitness)	Percent of Violations	Percent of Loads
1) Ignorance of the law - inconsistent judgements by MTC inspectors - difficulty in judging fitness	7%	2.0%
2) Unknowing violation of known laws - mechanical problems en route - lack of necessary inspection equipment	28%	7.8%
3) Knowing violations - carelessness - lack of maintenance - need to increase revenue	65%	18.1%
	100%	27.9%

It should be noted that mechanical problems en route account for a significant proportion (over 80%) of the perceived violations in the second group.

There is an interesting contrast between the reasons given for the violations of mechanical fitness regulations and the reasons why companies try to comply with these regulations. While carelessness was the most commonly cited reasons (33%) for the violations of regulations, safety was the primary reason (47%) cited for compliance with the same regulations. As was the case with the weight and dimension regulations, the reasons for compliance can be divided into three groups as follows:

Reasons for Compliance (Mechanical Fitness)	Percent of Reasons Given	
1) Avoid negative consequences within MTC control:		
- avoid down-time at MTC inspection station	10%	
- avoid fines	6%	
- avoid record	1%	17%
2) Avoid negative consequences within company control:		
- avoid breakdown	14%	
- reputation	10%	
- avoid down-time in repair shop	4%	
- provide good service	3%	
- economic	3%	34%
Positive reasons:		
- safety	47%	
- desire to be law abiding	3%	50%
		100%

The distribution of the reasons given for compliance with mechanical fitness regulations differs significantly from the distributions associated with weight and dimension regulations. There is more emphasis on positive reasons for compliance and on avoiding negative consequences within company control. The reasons for this shift may be that maintaining the mechanical fitness of the vehicles is both cost-effective for a company and appropriate on moral grounds. MTC mechanical fitness regulations may be regarded as minimum standards which company maintenance programs should meet.

4.4.2/ Potential Effect of Various Actions on Compliance

A detailed summary of the respondents opinions concerning the effect that various actions might have on the compliance with mechanical fitness regulations is contained in Appendix B. The actions which were rated as having the greatest potential effect on compliance are listed below, along with the percentage of respondents who indicated that the actions would increase compliance either greatly or somewhat.

	Action (Mechanical Fitness)	Greatly Increase Compliance	Somewhat Increase Compliance
1.	Suspending licenses of consistent offenders	75%	20%
2.	Increasing fines for repeat offenders	44%	47%
3.	Increasing number of inspections	35%	41%
4.	Having more mobile inspection units	26%	53%
5.	Doubling costs of fines	24%	52%
6.	Assisting truckers in routine inspections	35%	35%

The six actions ranked as having the greatest potential impact on compliance with mechanical fitness regulations are identical to the top six actions associated with both the weight and dimension regulations. The actions ranked one and two are the same as the first and second actions for the previous regulations, while the rank order differs for the remaining actions.

There is a difference of opinion as to who has the primary responsibility for ensuring that mechanical fitness regulations are complied with. While 30% of all of the respondents thought that drivers had the primary responsibility for compliance, 71% of the drivers responding to the questionnaire saw themselves as having primary responsibility. Respondents in the "maintenance manager" group also tended to name themselves as having primary responsibility (32%). This division of responsibility between the driver and the maintenance department is consistent with the approaches used by the different companies to ensure that vehicles complied with mechanical fitness regulations. Sixty-three percent of the respondents stated that their firms used regular inspection, 36% said that interval maintenance was used, and 20% indicated that driver reports on the condition of vehicles were used. (It should be noted that multiple responses were given to this question).

Based on the various responsbilities of different employees within a trucking firm, it appears that to be most effective any actions to increase compliance with mechanical fitness regulations should have as objectives the improvement of company maintenance and driver reporting programs.

4.4.3/ Appropriate Actions

As was the case with the previous regulations, the MTC could take three different types of action aimed at increasing compliance with mechanical fitness regulations. Key characteristics of appropriate actions within each type are described below:

Increasing the Cost of Non-compliance

As with the case with weight and dimensions regulations, actions of this type were judged by the respondents as being the most effective measures in terms of increasing compliance with mechanical fitness regulations. Emphasis was again placed on the characteristics of increasing the costs of non-compliance for repeat or consistent offenders. Less discriminating actions, such as doubling the cost of fines, were judged to be not as effective in terms of increasing compliance.

Increasing the Probability of Detection

These types of actions were also judged to be effective in increasing compliance. As before, the action of increasing the number of inspections was judged as somewhat less effective than having more MTC inspection units. However, the difference in the ratings given to these two actions is not substantial enough to allow conclusions to be drawn as to the relative impact of the actions. Any evaluation of actions of this type should take into account the fact that they are generally time and location specific. This influences the potential benefits which may result from increased compliance with mechanical fitness regulations.

4.5/ Vehicle/Driver Licensing Regulations

The vehicle/driver licensing questionnaire was completed by 86 respondents. The characteristics of the respondents and a detailed summary of the results of this questionnaire are contained in Appendix B.

4.5.1/ Existing Behaviour

The respondents indicated that knowledge of vehicle and driver licensing regulations is relatively thorough. Only 1% of the survey respondents indicated that they did not know the vehicle licensing regulations at all, while none indicated that they did not know driver licensing regulations at all. In addition, only 9% and 5% respectively indicated that they did not know the vehicle and driver licensing regulations "too well".

The set of responses on the primary reasons for the occurrence of licensing violations was used to estimate the proportion of violations associated with each of the following groups: ignorance of the law, unknowing violation of known laws, and knowing or willful violation. The results of this analysis are summarized in the table below. The table also indicates how the estimated 12.8% of the loads which are in violation of licensing regulations are distributed on the three types of violations.

	Primary Reasons for Violation (Licensing)	Percent of Violations	Percent of Loads
1)	Ignorance of the law - lack of knowledge of MTC licensing regulations - difficulty in judging	15%	1.9%
2)	Unknowing violation of known laws - forget to renew expired license - driver's fault - unable to check licensing	34%	4.4%
3)	Knowing violations - carelessness - cost or time involved in getting or renewing license - need to increase revenue	51%	6.5%
		100%	12.8%

As with the dimensions and mechanical fitness samples, "carelessness" was given most often as the primary reason for the occurrence of licensing violations.

The reasons why companies try to comply with the licensing regulations can be divided into three groups as follows:

	Reasons for Compliance (Licensing)	Percent of Reasons Given	
1)	Avoid negative consequences within MTC control:		
	- avoid fines	24%	
	- avoid down-time at MTC inspection station	8%	
	- avoid record	8%	
	- avoid hassle	1%	
			41%
2)	Avoid negative consequences within company control:		
	- reputation	13%	
			13%
3)	Positive reasons:		
	- desire to be law abiding	27%	
	- safety	19%	
			46%
			100%

The distribution of the reasons given for compliance with licensing regulations has some similarities with each of the distributions associated with the other regulations. The split between reasons which avoid negative consequences within MTC control or within company control respectively matched to some extent the weight and dimension distributions. The large proportion of positive reasons given for compliance with licensing regulations is similar to the emphasis on positive regulations shown in response to the mechanical fitness questionnaire. It is interesting to note that the respondents to the licensing questionnaire were the only group to rank "desire to be law abiding" first as a reason for compliance with regulations.

4.5.2/ Potential Effect of Various Actions on Compliance

A detailed summary of the respondents' opinions concerning the effect that various actions might have on the compliance with licensing regulations is contained in Appendix B. The actions which were rated as having the greatest potential effect on compliance are listed below, along with the percentage of respondents who indicated that the actions would increase compliance either greatly or somewhat.

	Action (Licensing)	Greatly Increase Compliance	Somewhat Increase Compliance
1.	Suspending licenses of consistent offenders	69%	21%
2.	Increasing fines for repeat offenders	38%	49%
3.	Having more mobile inspections	30%	44%
4.	Increasing number of inspections	29%	43%
5.	Having longer down-time in MTC inspection stations	27%	33%
6.	Doubling costs of fines	21%	43%

Five of the six actions ranked as having the greatest potential impact on compliance with licensing regulations are in common with the top six actions associated with the other three groups of regulations. The actions ranked one and two are the same as the first and second actions for the previous regulations. The action of assisting truckers in complying with the regulations has been replaced in the top six by the action of increasing down-time in MTC inspection stations. The lower relative ranking of providing assistance to truckers is probably due to the fact that the respondents did not feel that licensing regulations were difficult to comply with.

Respondents to the licensing questionnaire were the only one of the four groups to say that the owner/manager had primary responsibility for ensuring that licensing regulations were complied with. However, as with the other three examples, drivers in the licensing group placed primary responsibility with themselves. This division of responsibility between the driver and office personnel is consistent with the approach used by most of the companies to ensure that vehicles comply with licensing regulations. Sixty-two percent of the respondents indicated that their organizations routinely check compliance with licensing regulations before a truck starts on a trip. The driver would commonly be responsible for this check, while office personnel would have responsibility for ensuring that licenses are obtained and renewed as required.

4.5.3/ Appropriate Actions

Appropriate actions which the MTC could take to increase compliance with licensing regulations fall into two of the three groups of actions identified for the previous regulations. Actions associated with the third group, "Increasing the Capabilities of Truckers", are not seen as appropriate because of the relatively good understanding of vehicle and driver licensing regulations and the lack of difficulty in complying with these regulations. Key characteristics of appropriate actions within the first two groups are described below.

Increasing the Cost of Non-compliance

Actions of this type which included the characteristic of increasing costs for repeat or consistent offenders were judged by the respondents as being the most effective measures in terms of increasing compliance with licensing regulations. The less discriminating actions of increasing down-time and doubling the cost of fines were judged to be somewhat less effective.

Increasing the Probability of Detection

The two actions of this type which are highly ranked by the respondents, increasing the number of inspections and having more mobile units, are common over all of the regulations. One of the characteristics of these actions is that their implementation would simultaneously impact compliance with the different types of regulations. The time and location specific nature of these actions should also be considered as part of their evaluation and implementation.

4.6/ Comparative Analysis

In this sub-section, a comparative analysis is performed across the different categories of regulations for the following topics:

- primary responsibility for ensuring compliance with the various regulations;
- primary reasons for non-compliance with the regulations;
- primary reason for compliance with the regulations;
- ranking of potential actions which the MTC might undertake to improve compliance.

A summary of the respondents' opinions on who has primary responsibility for ensuring compliance with the different categories of regulations is presented in Table 7. Overall, the opinion is that drivers have primary responsibility in all categories except for vehicle and driver licensing. However, these results are biased by the results of drivers since 60%-80% of them indicated that they have primary responsibility for ensuring compliance with the regulations under examination. This apparent lack of consensus between drivers and other personnel is consistent with typical trucking operations. In most operations, drivers often have the responsibility for ensuring that loads are properly positioned and tied down on their vehicles, for reporting any problems with the mechanical fitness of the vehicle, and for checking that all required documents are on board at the beginning of a trip. Therefore, drivers are most likely to be aware of the possible violation of any one of the different trucking regulations. For example, if an over-weight or over-dimensioned load is suspected, drivers have to decide whether to contact either the dispatcher or other office personnel to inform them of possible problems with compliance.

TABLE 7
PRIMARY RESPONSIBILITY FOR ENSURING COMPLIANCE

(percent of respondents identifying each job title)

JOB TITLE	REGULATION CATEGORY				
	Weight	Dimensions	Mechanical Fitness	Vehicle Licensing	Driver Licensing
Driver	38	40	30	20	14
Dispatcher	14	11	1	5	4
Owner/Manager	11	10	20	41	43
Traffic Manager	9	9	1	8	9
Shipper	8	2	--	--	--
Operations Manager	6	13	1	9	15
Loading Personnel	3	1	--	--	--
Superintendent	2	2	1	--	--
Maintenance Manager	--	3	16	1	1
Maintenance Mechanic	--	1	12	2	1
Foreman	1	1	12	--	--
Other Mentions	8	6	6	14	13
Total	100%	100%	100%	100%	100%

Operating policies which govern the behaviour and response of the driver in various situations come either explicitly or implicitly from company management. Similarly, the assignment of specific tractors and trailers to certain loads is generally the responsibility of the dispatcher or other office personnel, and the specification of the tractors and trailers which the firm uses is usually the responsibility of the operations or equipment manager.

The dual nature of responsibility with respect to ensuring compliance with regulations may have an impact on the effectiveness of various actions aimed at increasing compliance. Therefore, the development of actions should consider the different roles which drivers and office personnel perceive for themselves.

As noted in earlier sections, the primary reasons given by the respondents for non-compliance can be grouped into three types:

- ignorance of the law;
- unknowing violation of known laws;
- willful violation.

The percentages associated with each type for the four categories of regulations are presented in Table 8. There is a moderate degree of consistency across the different categories of regulations in terms of the percentages assigned to each type of primary reason for non-compliance. As shown in the table, most of the primary reasons for violations given by the respondents can be grouped under the category "willful violation" for the dimension, mechanical fitness and licensing regulation. The reasons which were grouped under this type included carelessness and economic reasons. Approximately half as many respondents gave reasons which can be identified as "unknowing violations" of the regulations such as difficulty in judging compliance, while the remaining respondents gave reasons which can be associated with "ignorance of the law" such as a lack of knowledge of the regulations.

TABLE 8
PRIMARY REASONS FOR NON-COMPLIANCE
(percent of responses by category)

PRIMARY REASON	REGULATION CATEGORY			
	Weight	Dimensions	Mechanical Fitness	Licensing
Ignorance of the Law	10	13	7	15
Unknowing Violation of Known Laws	52	27	28	34
Willful Violation	38	60	65	51
TOTAL	100	100	100	100

TABLE 8A
PRIMARY REASONS FOR NON-COMPLIANCE
(implied percent of all truck trips by violation)

PRIMARY REASON	REGULATION CATEGORY			
	Weight	Dimensions	Mechanical Fitness	Licensing
Ignorance of the law	1.7	1.4	2.0	1.9
Unknowing Violation of Known Laws	8.6	2.9	7.8	4.4
Willful Violation	6.3	6.4	18.1	6.5
TOTAL	16.6	10.7	27.9	12.8

TABLE 9
PRIMARY REASONS FOR COMPLIANCE

PRIMARY REASON	REGULATION CATEGORY			
	Weight	Dimensions	Mechanical Fitness	Licensing
Avoid negative consequences within MTC control.	46	45	17	41
Avoid negative consequences within company control.	18	17	34	13
Positive reasons (abiding law and safety)	36	38	50	46
TOTAL	100	100	100	100

If the percentages presented in Table 8 are applied to the respondents' opinions about how frequently loads are actually in violation of the different categories of regulations, the implied percentages of all loads which are in violation of the regulations for the different types of primary reasons can be determined. These percentages are shown in Table 8A.

An examination of Table 8A shows that similar percentages of all trips are implied to be in violation of the different regulations due to ignorance of the law. The implied percentages of unknowing violations generally correlate to the responses with respect to difficulty in complying with the regulations (Table 5). The implied percentages of trips which are in willful violation of the regulations are very similar for all categories of regulations except mechanical fitness for which the percentage is significantly higher. This difference may be related to the perceived greater difficulty in complying with these regulations relative to dimension and licensing regulations and the perceived lower probability of inspection relative to the weight regulations.

The primary reason given by the respondents for compliance can also be grouped into three categories and these are:

- avoiding negative consequences within MTC control;
- avoiding negative consequences within company control;
- positive reasons which include primarily abiding the law and maintaining safety.

The percentages associated with each type of reason for the four categories of regulations are presented in Table 9. The breakdown by type of reason is similar over three of the four categories. Only for the mechanical fitness regulations are the types of reasons given for compliance substantially different. In this category, the reasons of "avoiding fines", "avoiding a record" and "desire to be law abiding" were cited less frequently, while those of "reducing wear and tear" and "safety" were cited more frequently. The large emphasis on safety and reduced wear and tear is not unexpected because of the nature of the regulations, and this in turn may account for the drop in the percentage for the other reasons.

One of the key differences among the four categories of regulations is that the most commonly mentioned reason for non-compliance in the weight and dimension categories was difficulty in judging compliance, while for the mechanical fitness and licensing categories the most common reason was carelessness. This difference is generally consistent with the ranking of the potential actions to increase compliance shown in Table 10. The action of assisting truckers in determining compliance was ranked third by respondents to the weight questionnaire and ninth by respondents by the licensing questionnaire. Both of the other two groups of respondents ranked this action sixth.

Over all categories of regulations, the actions of "suspending licenses of consistent offenders" and "increasing fines for repeat offenders" were ranked first and second respectively. Over 85% of the respondent indicated that these actions would increase compliance either greatly or somewhat. While the ranking of the other actions differs somewhat over the four categories, the differences are not substantial. For the top five actions in all but the licensing category, 70% or more of the respondents indicated that the actions would increase compliance either greatly or somewhat. Even the lowest ranked actions were rated by approximately 50% of the respondents as having the potential of increasing compliance either greatly or somewhat.

The conclusions which can be drawn based on the preceding analysis are presented in the following chapter.

TABLE 10

RANKING OF POTENTIAL ACTIONS

ACTION	REGULATION CATEGORY			
	Weight	Dimensions	Mechanical Fitness	Licensing
Suspending licenses of consistent offenders	1	1	1	1
Increasing fines for repeat offenders	2	2	2	2
Assisting truckers in determining compliance	3	6	6	9
Doubling costs of fines	5	4	5	6
Increasing number of inspections	5	3	4	4
Having more MTC mobile inspection units	5	5	3	3
Clearer information on MTC regulations	7	7	8	7
More available information on MTC regulations	8	8	7	8
Changing hours of inspection	9	9	10	10
Having longer down time on MTC inspection stations	10	10	9	5

5/ CONCLUSIONS

The data collected in this project will be useful in answering specific questions about the attitudes of the trucking industry with respect to various regulations. In this chapter, we present a number of specific conclusions in the following area:

- the factors influencing compliance including the key reasons identified for both non-compliance and compliance with the different categories of regulations;
- the relationship between the decision model presented earlier in the report and the findings of the survey;
- the type of actions which the MTC can take to improve compliance and the possible impact of these actions;
- the need for further research which would focus on some of the more important findings of this report.

5.1/ Factors Influencing Compliance

The key factors identified by the survey respondents which influence non-compliance include:

Weight Regulations

- difficulty in judging compliance
- need to increase revenue
- carelessness
- lack of knowledge

Dimension Regulations

- carelessness
- need to increase revenue
- difficulty in judging compliance
- lack of knowledge

Mechanical Fitness Regulations

- carelessness
- mechanical problems on route
- lack of maintenance
- need to increase revenue

Licensing Regulations

- carelessness
- cost or time to meet regulations
- lack of knowledge
- difficulty in judging compliance

Although carelessness appears to be the most important factor followed by the need to increase revenue and difficulties in judging compliance, there are significant differences among the different types of regulations. As a result, it is not appropriate to draw conclusions as to the key factors which influence non-compliance over all categories of regulations.

The key factors identified by the survey respondents which influence compliance include:

Weight Regulations

- avoid fines
- desire to be law-abiding
- safety
- avoid down time

Dimension Regulations

- avoid fines
- desire to be law-abiding
- safety
- avoid down time

Mechanical Fitness Regulations

- safety
- avoid breakdowns
- avoid downtime
- maintain reputation

Licensing Regulations

- desire to be law-abiding
- avoid fines
- safety
- maintain reputation

The most important factors for all of the categories of regulations except for mechanical fitness are the avoidance of fines and the desire to be law-abiding. For the category of mechanical fitness, the desire to maintain safe and troublefree operations appears to be the key factor. All of these factors seem to indicate that compliance with the regulations is related to a respect for the regulations and their intentions and to a view that the costs of violating the regulations are too high relative to any benefits which may accrue.

In contrast to the positive factors which influence compliance, the key factors associated with non-compliance seem to indicate that violators attach lower importance to meeting the requirements of the regulations and to the possible penalties associated with being detected in violation of the regulations.

The analysis of the survey results appears to indicate that both behavioral and economics factors differentiate violators and non-violators. On the behavioral side, violators are thought to be careless with respect to the regulations, while on the economics side, the potential for increased revenues is cited as a primary reason for non-compliance.

5.2/ Relationship with Decision Model

The decision model presented earlier in this report identifies three types of violators. The first group consists of those violators who are ignorant of the regulations. The results of the question on primary resons for non-compliance indicate that this group is relatively small and, in the opinion of the respondents, accounts for 10-15% of all non-compliance.

The second group of violators are those who know the regulations but unknowingly violate them. The opinion of the respondents is that approximately 30-50% of non-compliance falls into this category. The key reason for violations of this type was identified as difficulty in judging compliance. The opinions of the respondents imply that violations of this type occur primarily with respect to weight regulations and to a lesser extent, mechanical fitness regulations.

The third group of violators are those who both know the regulations and knowingly violate them. In the opinion of the respondents, 38-65% of non-compliance falls into this category. The primary reasons for knowing non-compliance were identified as carelessness and the need to increase revenues.

Carelessness was cited as the primary reason for non-compliance for all but the weight regulations. The non-weight regulations, dimensions, mechanical fitness and licensing, were not thought of as being difficult to comply with and the probability of inspection and detection for violations of these regulations was perceived as being lower than the probabilities associated with the weight regulations.

For violators where primary reason for non-compliance is the need to increase revenues, one could assume that non-compliance is perceived as being economically gainful taking into account the probabilities of inspection and detection and the costs of conviction. Among this group, the desire to be law-abiding is likely not sufficient to counteract the perceived economic benefits of violating the regulations.

5.3/ MTC Actions to Improve Compliance

In general there appear to be three ways in which the MTC can improve compliance with trucking regulations. These are:

- increase the cost of being detected in non-compliance with the regulations;
- increase the perceived probability of being detected in such a violation;
- assist truckers in complying with the regulations.

The first two approaches address both economic and behavioral factors. Increasing the cost and probability of being detected in violation makes it less likely that revenues can be increased through non-compliance. Similarly, an increase in the cost and probability of detection makes carelessness an inappropriate attitude due to the potential penalties.

The third approach addresses the behavioral factor of "difficulty in judging compliance". In addition, assisting truckers in complying with the regulations makes it easier to be careful rather than careless and can help to promote an improved awareness of the objectives of the regulations and the need for them.

5.3.1/ Increasing the Penalty of Violation

Increasing the penalties associated with violations of trucking regulations were, not surprisingly, judged to have a positive effect in increasing compliance. The possibility of "doubling the costs of fines" was expected to "greatly increase compliance" by between 21% and 26% of the respondents for the different types of violations. An unexpected result was, however, the very strong indication that increasing the penalties for repeat offenders would increase compliance. Suspending the licenses of consistent offenders was assumed to greatly increase compliance by between 66% and 75% of the respondents. Increasing fines for repeat offenders was expected to greatly increase compliance by 38% to 44% of respondents.

This type of action is, of course, aimed at those offenders who knowingly contravene the regulations. During the survey, however, it was brought out that persons in the trucking industry believe that there is an element within the industry that knowingly and consistently break the regulations. It was considered that a threat to their livelihood through removal of their license would be more effective than increasing fines.

Thus it would appear that within the industry increasing penalties for repeat offenders is expected to have a very considerable effect on compliance. The problem in implementing such a system is the definition of the "offender" who might be commiting a repeat offense. Is it the driver, the vehicle or the company owning or operating the vehicle

Logging offences against the drivers involved may not always be appropriate because, as has been shown, drivers are not necessarily responsible or knowledgeable of violations. A driver may be discriminated against because of his record of offences, even though he was not necessarily personally responsible for these offences. If he wished to change positions from one company to another, the record would presumably would have to go with him, perhaps lowering his opportunity for new positions.

The second possibility is to keep track to offences with respect to the vehicle. This certainly would be more equitable in that the owners/operators of the vehicles would be the ones penalized for repeat offences and who would therefore have an incentive to minimize offences. There are certain problems of definition, however. For example, does the tractor or the trailer bear the offence for offences against the weight and dimension regulations? It is also obvious that points could not be transferred with the sale of the vehicles. Therefore if vehicles had built up a considerable list of violations, it is possible that the owners could transfer or sell them when the cost of fines or other penalties became too high. There would also be difficulties in enforcement in terms of keeping records of the offences against specific vehicles. The vehicle license itself would have to be the bearer of such record. The PCV license applies only to "for hire" carriers. There is no inherent reason why "for hire" carriers should be treated differently than private truckers are with respect to the types of regulations analyzed in this report.

It therefore seems most appropriate that the record of offenders be kept in terms of the operator. In this case there is a problem of scale. The operator with one hundred vehicles should presumably be given more scope to make the "first" offences before the penalties are increased than would the operator with only one vehicle. We suggest therefore:

- offences should be kept track of in terms of the operators;
- when a specified threshold expressed in numbers of offences per vehicle is passed, higher deterent fines or other penalties should be asked for. For example, if there is more than one offence per vehicle over a particular length of time, say a year, then a higher penalty should be demanded.

5.3.2/ Increasing the Probability of Being Detected

Another conclusion from the study is that increasing the perceived probability of violations of being detected will encourage truckers to comply with the rules. Two actions in this area, increasing the number of inspections and increasing the number of mobile units both were selected as being in the "top six" of the potential actions that could be taken by the MTC. Increasing the efficiency of operation of the existing inspections stations, for example by installing in motion weighing scales, would also improve the probability of detecting a specific violation because the same manpower could then inspect more vehicles and truckers would not have any expectation of being "waved through" during periods of heavy use of the inspections station.

It is suggested that any improvement in detection methods should be accompanied by publicity to the industry which informs drivers and operators of the types of actions being taken to make them more aware of the increased probability of detection of violation. For example, the types of improvements should be described such as the opening of additional stations, the implementation of more mobile patrols, longer hours, etc. Of course, the specifics of these added services would not be included in the publicity. It is also suggested that these actions and the associated publicity be concentrated in the areas where problems in compliance are most severe.

5.3.3/ Assistance in Complying with the Regulations

The previous two types of actions are essentially negative, increasing the penalties associated with being caught and increasing the probability of being caught. This third type of action is to assist truckers in complying with the law. We believe that it is important to accompany the negative actions of the two previous steps with a positive action of this type. The survey results suggest that in the opinion of the trucking industry a relatively high proportion of the violations are unknowing, either through ignorance of the regulations or through unknowing violation of a known regulation. Particularly in the area of weight regulations, it may be appropriate to assist truckers in improving their ability to judge their state of compliance or non-compliance with the regulations. Possible actions could include:

- free public "non-inspection weigh scales" in terminals so that truckers could check their axle weights before setting out on a longer journey;

- tables and instruction manuals on how to correctly load the vehicles to minimize violations of the axle loading restrictions;

- suggested maintenance programs to ensure mechanical fitness;

- suggested driver reporting programs to ensure mechanical fitness.

In order to reduce the carelessness which was often cited as the primary reason for non-compliance in the case of non-weight regulations, the MTC could provide information on the intent of the regulations and attempt to increase the desire of careless violators to be law-abiding.

While these measures in themselves would only be of benefit to those who wish to use them, they would reinforce MTC's assertion that the objective of truck regulations is to improve safety and minimize damage to the highway system.

5.4/ Further Research Requirements

The results of the survey of the attitudes and behaviour of the trucking industry with respect to the four categories of trucking regulations have led to a number of conclusions on factors influencing compliance and on what appropriate actions may be taken by the MTC to improve compliance. The results have also pointed out a number of areas where further research would be useful, including:

- obtaining an improved understanding of the dual authority of drivers and management in decisions on compliance,
- determining an equitable manner for setting increasing fines for repeat offenders,
- verifying if greater assistance should be provided to truckers and what form that assistance should take,
- determining what actions would be most effective in reducing the carelessness which was cited by many of the respondents as the primary reason for violations of non-weight regulations.

APPENDIX A/ Focus Group Results

REPORT ON FOCUS GROUPS

A.1/ INTRODUCTION

A.1.1/ Objectives

The objective of the Focus Groups was to clarify the following:

- the compliance/non-compliance decision-making process, e.g., who makes the decisions about compliance for different types of regulations; what are the roles and job titles of these decision-makers?
- what are the best and most feasible mechanisms for identifying and contacting decision-makers for survey purposes?
- how to best disaggregate the trucking industry in order to define groups which are homogeneous in their attitude or behaviour towards trucking regulations.
- what are the most important issues and therefore items of content which should be included as questionnaire items for survey purposes?

A.1.2/ Sectors Identified

Initially, it was decided that Focus Groups should be drawn on an industry sectoral basis. Four sectors were identified:

- **Private carriers hauling a variety of goods.** This group includes shippers who use their own fleets for most of their trucking requirements and who haul various types of loads using a variety of tractor-trailer combinations. Some examples of private carriers who would find themselves in this category would be: Eatons, Canadian Tire, etc.
- **Private carriers hauling bulk commodities.** This group includes shippers who use their own fleets to transport such bulk commodities as stone and gravel, gasoline, liquids, concrete, etc. Examples of carriers in this group would be Imperial Oil, gravel contractors, etc.

- **Public carriers (i.e., for hire carriers) hauling a variety of goods for various shippers.** This group includes P.C.V. operators with Class A, H, K, L and X licenses. These also include public carriers who operate on a truckload or contract basis with a single shipper or receiver under license class C and D.

- **Public carriers (i.e., for hire carriers) hauling bulk commodities.** This group includes public carriers who primarily haul bulk commodities and operate under license classes E, F, FS, R, T and W.

A.1.3/ Criteria Established

In order to maximize the effectiveness of the Focus Groups, the following criteria were established:

- Each Focus Group should have 7 to 9 participants;

- Each participant should have a minimum of 10 years experience in the trucking industry in Ontario;

- Each Focus Group participant should be drawn from a different employer organization;

- A short pre-questionnaire was completed prior to Focus Group discussion;

- Two "animateurs" and one recorder were present at each Focus Group;

- Key actors (around compliance decision-making) were drawn, randomly, from the following occupational groups:

- dispatchers, traffic managers, employee drivers, maintenance managers, maintenance mechanics, loading personnel, and owner-drivers. In addition to this for the "public carriers" Focus Groups traffic and operations managers were included.

A.1.4/ Focus Groups

Using lists provided by the Ontario Trucking Association and the Private

Motor Trucking Council of Canada, potential Focus Group Members were telephoned and canvassed for their participation. Obtaining adequate numbers for the groups proved more difficult than had been envisaged. The final outcome was that five Focus Groups instead of four were conducted. The five Focus Groups were comprised as follows:

- **Private carriers hauling a variety of goods.** This group includes shippers who use their own fleets for most of their trucking requirements but our group composition was such that all key actors except drivers were adequately represented.

- **Private carriers hauling a variety of goods and those hauling commodities.** This group is referred to as private carriers "mixed" group. Since it was difficult to identify sufficient private bulk carriers who were prepared to participate in a Focus Group, a compromise was made and some private variety carriers were added to the private bulk, creating a private mixed group.

- **Public carriers hauling bulk commodities.** This group includes public carriers who primarily haul bulk commodities. All key actors except drivers were adequately represented.

- **Public carriers hauling bulk commodities and a variety of goods for various shippers.** This group contained both public carriers who hauled bulk commodity goods and those who hauled a variety of goods for various shippers. This group is referred to as the public "mixed" group; it was constituted, because of the difficulty in obtaining sufficient participants in order to have a Focus Group comprised solely of public carriers hauling a variety of goods.

- **The drivers' Focus Group.** This fifth Focus Group was convened because the previous four Focus Groups had an inadequate representation from truck drivers. The fifth group was comprised solely of drivers from both the public and private carrier groups. Obviously, drivers are a key actor group around trucking compliance and the Focus Groups would have been unrepresentative without this fifth compensating group.

In order to ensure an adequate representation at each of the Focus Group, 50% more participants were invited than were required (on the basis that there would inevitably be drop-outs) and in addition, a small honorarium was paid to each participant. They were also provided with light refreshments. A copy of the pre-questionnaire, which was distributed to and completed by Focus Group members prior to the sessions getting under way, is appended to this brief report.

Set out below are the opinions reported by the Focus Group membership. These opinions are not necessarily the opinions of the researchers but represent merely a reflection of the consensus of the Focus Group membership. In some cases, Focus Group members may have presented information as fact which is inconsistent with the view which MTC, or indeed the public at large, might take about the real nature of things. This data is presented exactly as it was recorded. Understandably, it deals with subjective impressions that people have about events, information, etc.

A.2/ WEIGHT REGULATIONS

A.2.1/ Focus Group Opinions

All five groups were unanimous in agreeing that **weight** regulations were the most difficult to comply with.

Public Mixed Group

In the **public mixed** group, members did not think there was much **knowing** violation of weight rules. Nor was there much of a problem with gross overweight. Rather, most of the difficulties centered around axle-weight regulations and axle-weight distributions. They estimated that the axle-weight violations would account for 90% of their total weight violations. In general, the driver's group supported the opinions of the public mixed group. Axle weights were identified as the most difficult part of weight regulations to comply with.

Both the public mixed group and the drivers' group noted a growing problem with containers. The containers arrive bonded and therefore cannot be opened to shift weight around to alter the axle-weight distributions. Often, this means that they can automatically expect a fine for violating axle weights. In some situations like this, public mixed courriers build the ticket cost into the customer's bill.

Public Bulk Group

In the **public bulk** and in the drivers' group, it was reported that some weight compliance difficulties centered around a lack of consistency in the calculations of axle weights between inspectors and inspection stations. The drivers' group, in particular reported that inspectors do not always know or understand axle weight regulations or formulae.

In addition, liquid loads take 20 min for the contents to settle once the truck is stopped at an inspection station. This makes it difficult for an inspector to judge weight distribution over axles.

There was some discussion over the effect the temperature changes may have on pay loads. For example, variations in temperature may affect the specific gravity of a liquid content which results in an increase in gross weight. However, this was not an opinion shared by all. On a timber load rain may increase the gross weight.

Shippers, such as refineries, generally have their own scales which are **certified for trade**. However, those scales used by MTC are not certified and may well be unreliable. Compounding this problem is the fact that there is no tolerance allowed on axle distribution. This makes it extremely difficult to account for variations which may occur between equipment or as a result of a weather change. It is especially arbitrary when one considers the extremely high gross weights involved. The drivers' group pointed out that in general they do not have access to axle-weight scales, only gross weight public scales, therefore, they are unable to determine for themselves whether or not they are legal.

Some trucks have compartment tanks with as many as three or four smaller containers within each one. If these smaller containers are loaded with different products it makes it very difficult to balance the weight appropriately.

One solution which was suggested included having MTC make the shippers work directly with the carrier on the gross weight and distribution issues. If this happened, compliance would increase because the shipper would be held responsible for gross weights (not the axle weights which would remain the responsibility of the carrier).

There is not necessarily a correlation between the safety of the vehicle and axle-weight distribution guidelines. For example, the bridge construction argument (i.e., the reason for the present formulation of axle-weight distribution) does not hold up in the opinion of one carrier who has "worked it out scientifically".

Private Variety Group

In the **private variety group**, axle-weight regulations were again regarded as the most difficult to comply with and they are quite frequently violated. The drivers' group however were of the opinion that public carriers were more likely to wilfully violate weight regulations than private carriers. Their argument was that private carriers have fewer trucks, so "downtime" hurts more, and also they have more regard for their corporate image and reputation than public carriers.

The private variety group reported that part of their problem is that the carrier does not know what loads they are going to have and therefore, they do not know what equipment to choose (e.g., single, tandem, or triple-axle units). The Shell Company for example, says that it always meets gross-weight regulations on the packaged side but they have found it impossible to meet axle-weight regulations. To meet gross-weight requirements on the steering axle they have tried computer modelling. But even with this approach they have had to give up.

One group member felt that the axle-weight regulation leads to a gross misuse of resources. For example, his company is running tandems more often than they need just to make sure they are not overweight. The tandems are harder on the road and they may be creating unsafe conditions. Under Bill 70, the driver can refuse to drive an unsafe load and therefore the two laws are conflicting with each other. Also, in terms of misusing resources, if loads were weighed on site, lining up drivers for weighing would cost more dollars than it's worth. This in turn, would mean that they would not be able to meet delivery schedules.

The public mixed group reinforced the driver's opinions about insufficient access to scales. They reported that few companies have weigh scales at the terminal. Because of the cost of buying a scale, they find it cheaper to put an extra axle on the load and load the truck slightly under gross weight.

When asked whether private companies were more or less likely to violate weight regulations than public companies, the group could see pros and cons for each. They reported that the private companies had more consistent loads and had more knowledge about the kind of loads they were carrying, and so should find it easier to stay "legal". Although, the public companies have to protect their licenses and cannot afford to violate, they are (in order to make a profit) under more pressure to maximize pay loads on each trip. The drivers' group reported this to be the case, particularly, where the weight of the load carried directly determines the profit of the carrier. (e.g., gravel, grain and other bulk commodities). Some public carriers do consciously violate and build the cost of the ticket into the bill.

They reported that whether a public company takes this attitude or not, really depends on senior management. The group pointed out that, whether private or public, if they are consistently overloading, they will have equipment problems which in the long run will cost them more than the violation is worth. They reported that many private companies feel it is better and simpler to have single, tandem and triple axle units available and load by gross weight.

It was also noted that the minimum infraction ticket for overweight on an axle is $53. The amount of the fine is apparently directly related to the amount overweight. Thus, the greater the amount overweight, the greater the amount of the fine. Fifty-three dollars is the absolute minimum. Most members of this focus group said that the minimum of $53 is all they ever have had to pay. In other words, the majority of them report that they are making "trivial infractions". To a modest extent, Ministry data supports this. From an MTC study on overweight violations

56% of a random sample of 1090 violators were fined $53. However, of this 56% the majority of violations had overweight infractions of 1 000 to 2 000 kilos -- hardly a trivial infraction.

Three other points which the group noted about the weight violations are:

- drivers love it because they are paid for waiting time;
- the union grievances committee loves it because it gives them an opportunity to criticize the company;
- the dock loaders at the other end love it because they are paid waiting time while the loads are being re-arranged.

Private Bulk Group

In the **private bulk** group there was general agreement that there were few problems around weight regulations because trucks tended to "cube out" before exceeding gross or axle limitations. This was the only group to report that weight regulations were not a problem. There was a good deal of discussion around using "three bottom trailers" (three trailers hauled by one tractor). Apparently, such rigs have better or equal braking capacities than do single trailer vehicles.

Generally, it was felt that ignorance of axle-weight regulations was not a problem -- it was simply a matter of training and there was no excuse for violations. Canadian Tire, for example, will re-load and re-distribute their pay load if it is discovered that unlawful weight distribution has occurred. There is a great motivation to comply because of the public image of these companies.

A.2.2/ RESPONSIBILITY FOR COMPLIANCE AROUND WEIGHT REGULATIONS

In the **public mixed** group the following people were identified in order of importance:

- the dispatcher, who is responsible for selecting the type of equipment used;
- the dock supervisor who decides how the load is loaded;
- the driver.

In the **public bulk** group the following people were identified in order of importance:

- the maintenance manager or, as he is sometimes termed, operations manager or traffic manager. These people often give instructions to dispatchers;
- dispatchers;
- shippers;
- drivers.

In the **private variety** group, the dispatcher is the most important decision-maker.

In the **driver's group** many felt that compliance should be made the responsibility of shippers and/or their bosses. In general, drivers stated that they did not have the authority to have any impact on decisions about weight distribution. (e.g., often drivers will arrive to find the trailer is already loaded and sealed and that they have no power to inspect the load.) In an extension to the argument, drivers point out that dispatchers, too, have limited authority and that they are usually following policy or orders from their bosses in non-compliance situations. In consequence, the drivers' group view the traffic managers as the most significant actor in influencing weight regulation compliance.

In the **private mixed**, the operations manager or the transportation manager were identified as the people most responsible for compliance. They oversee the dispatchers and the maintenance people.

A.2.3/ THE BEST WAY TO SURVEY THESE DECISION-MAKERS

The groups tended to agree that mail and telephone questionnaires would be inappropriate for reaching either drivers or dispatchers. The best method they thought would be face-to-face. Even then one should first get permission from their superiors to approach them. After this, it will be best to go to the terminal and arrange to talk to people there. The group did not recommend talking with people at truck stops.

If one wants to survey above the level of the dispatcher, one could probably use a mail or a telephone survey. Some of the focus group members were very helpful and suggested that if they were informed as to who in their organizations should be surveyed they would get a survey form filled out by the appropriate people. But it was suggested that the answers be in the form of check marks. It would not work if the responses required long written answers.

A.3/ MECHANICAL FITNESS REGULATIONS

A.3.1/ Focus Group Opinions

Public Mixed Carriers

This group identified dispatchers as the most responsible actors for maintaining mechanical fitness. Ensuring that mechanical fitness is maintained was regarded as their job. Tires were cited as a big part of the problem. One member of the group felt that the MTC regulations regarding tires were nonsense. He asserted that a bald Michelin tire is safer than many new triple ply tires because the Michelin's have a deeper tire depth. There was also some anger in the group around the issue of who has the right to say that a truck is mechanically fit. Many felt that the Ministry inspectors were just novices who were not qualified to do a mechancial fitness test. In terms of motivation to comply with mechanical fitness some of the larger companies actually welcomed

MTC inspections. They feel these inspections are very thorough and they save them the cost of having their own mechanics do a fitness test. The group as a whole also felt that a company has nothing to gain by violating mechanical fitness rules. They have their licenses and jobs to protect. In terms of the changes that are needed, most of this group felt that the gypsies and private carriers were the ones who most needed checking out. They also felt that the whole Class A license needs to be reviewed.

Public Bulk Carriers

This group felt that the most difficult area regarding mechanical fitness was that MTC refuses to tell a company what the guidelines are. They reported that these guidelines should be made readily available to all trucking companies. They believe that at present there is no code for the inspection of trucks. In addition there is no monitoring, meaning that MTC inspectors do not tell a company where the problem is. This group seemed to think that the mechanical fitness regulations were "rotten laws". The law just gives the inspector an opportunity to write up a company if he feels like it.

The group also noted that some mechanical fitness items are negotiated by contract between the company and the driver or the driver's union. They also felt that items such as time and wear were completely uncontrollable factors. For example, a truck can be sent out as mechanically fit and 10 min down the road the lights can fail. There is no way of controlling this kind of contingency.

Public Variety

In general, this group reported that conforming to mechanical fitness regulations was not a big problem. But they felt that many of the mechanical fitness regulations were arbitrary and not well described. They reported, for example, that the regulations do not give any guidelines. One member of the group cited a truck of his which in the course of one hour had received three different tickets for three different light infractions. In each case, the driver had been stopped by a policeman and issued a ticket for one type of light violation. He was then stopped again and issued a ticket for a different light violation. He was then stopped by a third policeman and issued another ticket for a different light infraction. In no case had any one single policeman picked up on all three different types of light violations.

The group also felt that the proposed new law on mechanical fitness which would insist upon authorized safety checks every six months would be government over-regulation or government over-kill.

The group pointed out that owners have an interest in getting the best use out of their trucks and for this reason, all companies have regular preventive maintenance checks. One key issue is probably brakes and in this regard miles, not time, should determine when check-ups are needed. The group also noted that government inspectors at stations cannot enforce their own regulations now. So how are they going to ensure uniformity of inspection by farming inspections out to high cost private garages? This procedure would either add more to the cost of the inspection or make roads unsafe because private garages might be open to bribery in order to have a vehicle certified as safe. Finally, the group noted that most drivers are careful people; their lives and their livelihoods are at stake.

Private Mixed

This group also reported that they had little difficulty with meeting mechanical fitness regulations. The representative from Canadian Tire advocated compulsory safety checks be done on a yearly basis. Unlike the last group, which was afraid that such safety checks would open the door to unscrupulous safety practices, these men thought that most people were basically honest. Conscientious maintenance practices were considered essential to preserve company image, and to extend equipment life. In addition, "drivers will not touch an unsafe vehicle" and as in previous groups, the occasional practice by MTC of checking vehicles on the premises was welcomed as a free and unintrusive service.

Driver's Group

Drivers were most upset by what they saw as the lack of enforcement, or incompetent enforcement of mechanical fitness regulations. Inspection Stations only care about paper work and weight violations, while they let serious problems (including brake, steering, weak frames, etc.) go by unnoticed. (Apparently they also let drivers high on pep pills go by.) Drivers suggested that MTC have mandatory inspection programs every six months like they do in Alberta, and also to have more unannounced spot checks at terminals to determine mechanical fitness. They believe that there are simply too many unsafe vehicles on the road because companys are unwilling to pay the money needed for appropriate maintenance programs. Also, drivers do not use their collective power to force companies to change these lax procedures. Drivers may be in the same position in cases of mechanical defects as they are in overweight situations, i.e., they'll be fired if they refuse to carry an overweight load or if they refuse to drive an unfit truck.

Drivers reported that common carriers are the worst offenders because they have more trailers than power units. Thus, drivers don't care if brakes, lights etc., on a trailer are bad because chances are they will not have to pull that trailer again and therefore they don't report the mechanical problems.

Drivers' feel that inspectors are not competent to properly check mechanical defects. Some suggested that mechanics be included at Inspection Stations, however, others felt that this would hold up the inspection process too much.

Poor driver education around mechanical fitness issues was also cited as a contributing factor. That is, not enough drivers know when they are in trouble because they lack basic knowledge about mechanical fitness issues. For example, all drivers should know how air brake systems work in order to make emergency repairs, if necessary, to get a crippled truck back to bays. Drivers reported that 50% of the responsibility for mechancial fitness depends on the drivers (100% of it, if he has an accident and kills somebody.) Better procedures are required to safeguard/encourage drivers in reporting mechanical defects. Managers were cited as the most important factor in determining compliance with mechanical fitness regulations. While mechanics were cite as important, their judgement (especially in marginal cases of mechanical defect) was subject to management's discretion. The group felt that drivers should report in writing all mechanical defects and have them stamped by the company in order to cover themselves and ensure a safe operation.

A.3.2/ Responsibility for Compliance Around Mechanical Fitness Regulations

1/ In the **public mixed** group, as noted before, dispatchers were identified as the people most responsible for ensuring that mechanical fitness is maintained.

2/ **Public bulk** Three actors were identified as being important decision-makers by this group. The first was the maintenance manager who sets the standards and instructs the mechanic. The mechanic is, in turn, the second most important actor. The third is the driver. Some members of this group felt that under Bill 70 the driver has been given the last word on mechanical fitness.

3/ **Private Variety** Mechanics were identified as the first line of defence. This is especially so when trucks are leased and the mechanics are responsible for ensuring that the truck goes back for a safety inspection when the leasing company has stipulated it.

The driver is the last line of defence. Everybody has a set time for overhauls. Meanwhile, the driver is depended upon to detect problems in the intervals between these set times for overhaul.

Some other circumstances affecting compliance with mechanical fitness were noted by this group.

- Some aspects of compliance are determined by drivers' complaints. That is, noticing the problems is mainly up to the driver who should report it to the maintenance department.

- The police do not really understand all the regulations, but every now and again they get on a kick of issuing tickets.

- Weather conditions -- it is much harder to spot violations when there is four inches of snow and slush all over a truck.

- Some aspects of the regulations are difficult to comply with, for example, how do you keep reflectors on mud flaps?

- The group felt that our list of most frequent citations is crazy (i.e., trivial).

- Increasingly, insurance companies have a vested interest in checking out the companies and ensuring mechanical fitness. The group felt that the two factors which would have the biggest impact on safety were:
  1/ a complete check once a year of all equipment,
  2/ all trucks should have tachygraphs.

This would be the equivalent to the black box in an airplane. Anyone caught tampering with the tachygraph should be automatically fined. It would be feasible to install this equipment since its costs is in the $750 range.

- Another improvement might be to have all trucks equipped with a built-in maximum speed regulator.

4/ The Private Mixed This group again identified the maintenance manager as the key actor in complying with mechanical fitness regulations.

A.3.3/ The Best Way to Survey These Decision-Makers

For maintenance managers or their equivalents, the group agreed that a telephone or mail survey would probably work. But for mechanics and drivers, a face-to-face interview is probably the only way. Further, it would be wise to phone the terminal managers or the fleet managers to get permission to access these people first. Then it would be best to try to reach them at their place of work between 7:30 a.m. and 4:00 p.m. It would probably be best to contact them at the end of the day when they have more time.

A.4/ DIMENSIONS REGULATIONS

A.4.1/ Focus Group Opinions

Most groups felt that on the whole dimensions did not pose a major problem. There is some difficulty in meeting the different provincial and U.S. standards but this was not really a very important problem.

Some groups felt that the steel industry and forest products, such as timber, lumber, etc., would have more problems with the dimension regulations than they were having. The driver's group reported differential enforcement by Ministry inspectors.

A.4.2/ Responsibility for Compliance Around Dimensions Regulations

The main decision-makers affecting compliance around dimensions are first, those people who "spec out" the equipment needs. The traffic manager and the equipment manager are the people who "spec out" the equipment and buying this way costs more than buying "off the shelf". The spec'ing is largely done to meet axle spread requirements. "Spec'ing out" is a treacherous business and it costs alot.

In some circumstances applying compliance to dimensions, one group felt that the dimensions regulations were written by lawyers for lawyers; and by engineers for engineers. They were certainly not written for the users. The dispatchers and other people learn on the job but it is a "hands on" type of learning. In other words, they are told "use this type of equipmdnt for that type of load" etc. If the regulations change, the dispatchers don't know what to do until management first understands exactly what the regulations mean and then passes on the instructions to the dispatchers.

A.4.3/ The Best Way to Survey These Decision-Makers

Since the main decision-makers are the traffic managers or equipment managers the best way to survey these people would be by telephone or by a mail survey.

A.5/ Licensing Regulations

A.5.1/ Focus Group Opinions

The Public Mixed Carriers This group felt that for them the real problem was not an absence of permits but mostly violations of the permit conditions, e.g., a lack of signs, lack of flags, etc. The problem here was the matter of getting the right information on what the permit stipulates, as there is a lack of standardization between the various provinces in Canada and also between the U.S. and Canada.

For licensing other than P.C.V., the group could see nothing wrong with the licensing laws or classification for themselves but they believed that the people testing for Class A licenses were incompetent.

In the **public bulk** group, licensing regulations again were not a very serious problem compared to the weight regulations. The group felt that violating licensing regulations by not showing the name of the company on the side of the truck, was mainly the work of irresponsible people who had something to hide. In other words, any name violations would be done deliberately by people who did not want their company to be known. As an example, they cited a certain oil company, which is using blue and white tankers with their name in very small print to transport hazardous materials such as propane.

In general, the driver's group had no complaints with licensing regulations, nor did they have problems in complying. However, their reported concern was about the licensing of inexperienced drivers. They felt that many training schools did insufficient on-the-job training and dispatched drivers to cope single-handedly too early.

Additional Point Regarding Licensing Regulations

One group, the **private mixed** carriers, felt that although there were a few problems with current licensing regulations they were apprehensive about the new Hazardous Materials Act. They wanted to know, for example, if substances such as aerosols, deodorant sprays, after-shave, and oven cleaners would be classified as hazardous materials. The gentleman from Shell Oil was particularly concerned about the Hazardous Materials Act proposal. He felt that his company would be greatly affected. There would be a mammoth rewriting of all their computer-based loading programs (that is, regulations on how products are described; what placards to put on; where to put them, etc.). Also, the company would have to have a spill-team ready to go anywhere in Ontario. He also felt that all one needed to know with regard to hazardous material was, at the point of shipping, what was the truck license number and what was in the truck by compartment?

A.5.2/ Best Way to Survey Decision-Makers

The best way to survey the drivers might be to go to truck stops but on the other hand, drivers are only allowed 15 min per stop. This would give very little time for completing a survey. A better idea would probably be to go to the terminal where one could find all the drivers needed. In terms of surveying the managers, once again, it was felt that a telephone or a mail survey would be appropriate.

APPENDIX B/ Survey Results

B.1/ WEIGHTS

B.1.1/ Sample

The questionnaire concerning weight regulations was completed by 160 respondents, 25% of them in the north and 75% in the south.

Fifty-six percent of the respondents were associated with public companies and 44% came from private companies. Bulk and variety haulers were equally represented in the sample.

For purposes of contacting appropriate personnel and analyzing data, the sample was divided into three personnel categories, with one-third of the respondents in each: driver, dispatcher (person responsible for the assigning or dispatching of trucks to specific loads or routes), and dock supervisor/shipper (person responsible for supervising the loading of trucks at their own loading docks). Quotation marks around the latter two terms will indicate, throughout the report, that reference is being made to a personnel category rather than to a job title.

Drivers made up one third of the respondents to this questionnaire, owners/ managers represented 17% and dispatchers 14% of the sample. Respondents' other job titles represented less than 10% of each, as follows: operations manager (8%), shipper (6%), traffic manager (5%), foreman (4%), loading personnel/dock supervisor (3%), terminal manager (1%), maintenance manager (1%), fleet supervisor (1%), all others (4%).

The following tables set out more information about the companies in the sample.

Number	Straight Trucks	Tractors	Trailers
0	23%		
1-5	19%	20%**	15%***
5-15	15%	12%	11%
16-50	9%*	19%	19%
51+		15%	22%
N/A Drivers	33%	33%	33%
Refused/D.K.	1%	2%	1%
100%	100%	100%	100%

* This figure represents the percentage of companies with any number of straight trucks over 16.

** Includes 0 tractors.

*** Includes 0 trailers.

Number of Full-Time Employees	% Responding
1-10	7
11-50	20
51-200	16
201+	21
N/A Drivers	33
Refuse/D.K.	4
	100

Main Types of Goods Hauled	% Responding
Lumber	8
Stone	11
Steel	13
Chemicals	13
Machinery	11
Petroleum	9
Farm Products	6
General Merchandise	14
Dry Goods	3
Foodstuffs	11
Anything & Everything	9
Plastics, Glass	3
Paper Goods	4
Liquids	2
All Other Mentions	5
	100

Years Working in Trucking Industry	% Responding
1-5	16
6-10	17
11-20	31
20+	36
	100

Forty-two percent of the drivers were driving trucks leased to the company, and 15% of the drivers were "leased" to the company.

B.1.2/ Knowledge of MTC Regulations

Respondents were asked how well they would say they knew MTC regulations in each of the areas of the study. The table below sets out their responses by percentage of respondents. (NOTE: Columns may not total 100% because of rounding.)

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Know Very Well	21%	24%	39%	30%	39%
Know Fairly Well	54%	54%	48%	46%	46%
Know Not Too Well	20%	14%	10%	16%	10%
Know Not At All	4%	8%	3%	8%	5%
	100%	100%	100%	100%	100%

It can be seen that respondents felt they were most familiar with weight and driver licensing regulations; only 13% of respondents said they did not know weight regulations "too well" or "at all", and 15% were similarly unfamiliar with driver licensing regulations. However, 22% to 24% were not familiar with the regulations concerning mechanical fitness, dimensions or vehicle licensing.

B.1.3/ Difficulty of Complying with MTC Regulations

Perhaps along with respondents' familiarity with weight regulations was the finding that weights were considered by far the most difficult of the MTC regulations with which to comply. The following table sets out the responses concerning the level of difficulty for trucking firms in complying with regulations.

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Very difficult to comply	1%	3%	13%	1%	1%
Somewhat " " "	8%	13%	26%	6%	4%
Not too " " "	26%	26%	23%	23%	18%
Not difficult to comply	62%	56%	37%	66%	74%
Don't Know	3%	2%	1%	4%	3%
	100%	100%	100%	100%	100%

Driver and vehicle licensing regulations were considered least difficult to comply with, followed closely by mechanical fitness regulations.

B.1.4/ Violations

The majority of respondents (59%) said that most of the violations their companies had received in the past two years fell into the weights category. In comparison, only 4% of respondents said most violations were in the mechanical fitness category, 3% said vehicle/driver licensing, and 2% said dimensions. Twenty-three percent of those surveyed said their companies had had no violations at this time; but it should be noted that almost half of all driver-respondents said their companies had no violations. Ten percent of the sample didn't know into which category most violations fell.

B.1.5/ Responsibility for Compliance with Weights Regulations

Respondents were asked who (job title) **has** primary responsibility in their companies for ensuring that weight regulations are complied with and who **should have** this responsibility. The following table sets out their responses by percentage. The category "secondary" responsibility refers to the responses to "who else **has** or **should have** responsibility".

Job Title	Has Responsibility		Should Have Responsibility	
	Primary	Secondary	Primary	Secondary
	%	%	%	%
Driver	38	15	31	16
Dispatcher	14	5	11	5
Owner/Manager	11	9	11	6
Traffic Manager	9	5	9	5
Shipper	8	6	10	6
Operations Manager	6	4	6	3
Loading Personnel/Dock Supervisor	3	6	7	5
Superintendent	2	1	1	1
Foreman	1	-	1	-
Maintenance Mechanic	1	-	1	-
Terminal Manager	1	3	2	3
Fleet Supervisor	1	-	1	-
MTC or Ministry	1	1	1	-
All Other Mentions	4	4	4	5
Don't Know	1	-	2	-
No One Responsible	1	41	3	46
	100	100	100	100

The table indicates that, by far, the greatest percentage of respondents thought the driver has primary responsibility for ensuring compliance with weight regulations. However, a breakdown of these results indicates that there are significant differences in the responses of drivers, "dispatchers" and "dock supervisors/shippers". (Note that the last two personnel categories include respondents with other job titles.) Of the drivers, 79% said that drivers have primary responsibility; in comparison, only 13% of the "dispatchers" and 22% of the "dock supervisors/shippers" placed primary responsibility with the drivers. Drivers also mentioned fewer other people (job titles) as having (secondary) responsibility than did the other two groups.

Concerning who **should** have primary responsibility, the small shift away from "driver" was, again, largely influenced by driver respondents.

While the majority (54%) of drivers felt that compliance should be their primary responsibility, the number was significantly fewer than those who said it was their responsibility. There tended to be more spread of opinion among "dispatchers" and "dock supervisors/shippers", both as to whose responsibility compliance is and whose it should be.

B.1.6/ Difficulty with Weight Regulation Compliance

Concerning weight regulations specifically, more than half (55%) of the respondents thought the regulations were about the same in terms of difficulty in complying; 39% thought some regulations were more difficult to comply with than others. Of the latter group, almost all specified axle load restrictions as the most difficult to comply with.

The following table sets out the reasons given for difficulty in complying with MTC weight regulations.

	Primary (n=160) %	Secondary (n=128) %	Tertiary (n=48) %
Difficulty in judging load distribution	40	9	4
Lack of necessary weighing equipment	6	4	4
Need to increase revenue	4	1	-
Shifting weight due to unloading on route	3	3	-
Nature of load	3	3	-
Variation in nature of load	3	1	-
Lack of appropriate vehicle	3	2	-
Incorrect waybills	3	2	2
Legislation difficult to understand	3	1	-
Weather	3	3	2
Carelessness	2	2	4
Shippers requirements	2	1	-
Lack of knowledge of MTC weight limit	1	1	2
Truck/equipment manufacturers	1	-	-
Bonded containers	1	-	-
Poorly qualified MTC inspectors	-	4	-
All other mentions	4	2	2
No reason	17	60	80
Don't Know	3	2	2
	100	100	100

Respondents were asked if they had facilities to check weights before starting a trip; 41% said yes and three-fifths of these were able to check for both axle and gross weights.

B.1.7/ Probability of Inspection

Respondents were asked, "We're interested in what the probability is of a truck being **inspected** at an MTC inspection station during a trip. Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for weights at an inspection station in Ontario during the trip?" Responses are set out below, grouped by percentage ranges.

% Probability of Inspection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	4%	8%	3%	26%
1-25	31%	26%	33%	36%
26-50	16%	11%	13%	11%
51-75	13%	5%	16%	3%
76-99	14%	5%	17%	3%
100	6%	8%	9%	3%
Don't Know	16%	38%	11%	20%
	100%	100%	100%	100%
Mean	43.9%	39.3%	47.8%	18.8%

On average, a significantly lower probability of inspection is reported for minor highways than for major highways. The differences in reported probability of inspection in Central and Northern Ontario are modest and appear to be non-significant.

B.1.8/ Probability of Violation Detection

Respondents were asked, "We're interested in what the probability is of a weights violation actually being **detected** during a trip. Assuming 100 trucks on average trips are in violation of the weights regulations, how many trucks out of 100 would you say are likely to be detected at an inspection station in Ontario as being in violation of the weights regulations?" Responses are set out below, grouped by percentage ranges.

% Probability of Detection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	1%	5%	-	20%
1-25	31%	22%	33%	35%
26-50	18%	14%	19%	16%
51-75	11%	9%	14%	3%
76-99	14%	9%	16%	3%
100	9%	4%	9%	3%
Don't Know	16%	37%	10%	19%
	100%	100%	100%	100%
Mean	47.8%	42.1%	49.8%	22.7%

B.1.9/ Frequency of Weight Violations

The following table sets out the respondents' opinions about how frequently loads are actually in violation of weight regulations.

% Frequency of Violation	% Responding
0	1
1-10	54
11-20	11
21-30	7
31-50	9
51-75	4
76-99	-
100	-
Don't Know	13
	100
Mean	16.6

B.1.10/ Commentary

The table on page 87, Section B.1.7, shows that the average reported probability of a truck being inspected (while travelling on a major highway) at a MTC Inspection Station is 47.8% i.e., on average, 48 trucks out of 100 are likely to be inspected for weight violations.

Respondents' opinions are that on average "loads are actually in violation of weight regulations" 16.6% of the time i.e., 17 out of 100 trucks are, on average, in violation of weight regulations.

These two pieces of information can be applied as follows: 48 trucks out of 100 are likely to be inspected for weight violations. Of these 48 inspected, 17% are in respondents' opinions on average, in violation i.e., 8 of the 48 inspected trucks are in violation.

The table at the top of page 88, Section B.1.8, shows that respondents' opinions of the probability of a truck which is in violation of weight regulations being detected at an inspection station is 49.8% i.e., on average, 50% of trucks which are in violation are, in the opinion of respondents, likely to be detected.

This can be applied as follows: if 8 of the 48 trucks inspected (above) are actually in violation then 4 of these will be detected.

Respondents' opinions are that if 100 trucks are travelling on major highways in Ontario then the probability is that 17 of these will be in violation of weight regulations and that 4 of these will be detected.[1]

B.1.11/ Problems Caused by Violation Detection

The following table sets out the problems cited by respondents as resulting from detection of weight violations at an inspection station. (Up to three responses were taken.)

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[1] SOME RESERVATIONS

Although on the face of it the analysis above seems reasonable, readers should interpret it cautiously.

Bear in mind that the three pieces of data involved were collected discretely:

- respondents' opinions of loads in violation;
- a respondents' opinions of the probability of a truck in violation being detected; and
- respondents' opinions of the frequency of trucks in violation.

The three questions were not grouped together and asked as a sequence, in the interview (as the analysis would suggest) but were distributed through the questionnaire, separated by the other questions. It is, therefore possible that some respondents may have been thinking of detection rate when they responded to the inspection question and vice versa.

It is recommended that in future research in this area, a design be developed to test, without equivocation, the validty of the above analysis and our tentative interpretation.

	Primary (n=160) %	Secondary (n=147) %	Tertiary (n=65) %
Fine	46	12	6
Down time at inspection station	33	15	2
Need to rearrange load	6	3	2
Reputation	3	3	-
Need to transfer load	1	4	5
Increased cost	1	-	-
Reduced pay load	1	-	-
Problem with customer	1	1	5
License penalized	-	3	2
All other mentions	1	3	2
None	4	52	71
Don't Know	4	3	6
	100	100	100

B.1.12/ Number of Weight Violations

"Dispatchers" and "dock supervisors/shippers" were asked how many times their organizations had been written up for weight violations in the past year. Drivers were asked how many times they, themselves, had been written up for such violations in that time. The overall results are clearly influenced by the drivers, 75% of whom reported no violations. Of the total sample, 39% reported no weight violations; another 12% didn't know how many violations had been written up.

Most of those reporting violations said they or their companies had been written up one to five times in the past year; this was true across the three respondent categories. "Dispatchers" tended to report more violations (11-20 or 21+) more often than did "dock supervisors/shippers".

B.1.13/ Reasons for Weight Violations

The table below sets out respondents' opinions as to the reasons for the occurrence of weight violations. The results can be compared with the responses concerning the difficulties in complying with weight regulations. (Up to three responses were taken).

	Primary (n=160) %	Secondary (n=142) %	Tertiary (n=72) %
Difficulty in judging load distribution	30	8	3
Need to increase revenue	19	10	1
Carelessness	9	4	4
Lack of knowledge of MTC weight limit	8	5	3
Lack of necessary weighing equipment	6	6	3
Incorrect waybills	3	3	3
Shifting weight due to unloading on route	3	3	-
Shippers requirements	3	2	1
Lack of appropriate vehicle	2	3	3
Variation in nature of load	2	2	-
Legislation difficult to understand	1	1	-
Weather	-	1	1
Nature of load	-	1	-
Bonded containers	-	-	1
All other mentions	3	2	1
No reason	3	44	70
Don't know	9	5	7
	100	100	100

Some differences are evident in the two tables. "Difficulty in judging load distribution" was still given by most respondents as the primary reason for violation of weight regulations; but other reasons were given more frequently as causes of violations than they had been given as difficulties in complying with regulations. "Need to increase revenue", "carelessness" and "lack of knowledge of MTC weight limit" were all seen more clearly as reasons for violations than they had been as difficulties in complying. Only 3% of those surveyed gave no reason for violations, as compared with 17% who saw no reason for difficulties in complying.

B1.14/ Identification of Violators

When asked what kind of operators they thought were the primary violators of weight regulations, 25% of those surveyed said "gypsies". Carriers of specific kinds of product loads were named by 14% of respondents, and "for hire carriers", "private truckers" and "brokers" were each identified by 10% of the sample. "Large operators", small operators" and "young, inexperienced" operators were mentioned by a few respondents. Twelve percent didn't know who the primary violators were, and 8% said "no general type".

When asked to identify secondary violators, 49% said "no general type", and 21% didn't know. Carriers of specific product loads were named by 8% of respondents and "private truckers" by 7%. Others were named by less than 5% each of the sample.

B.1.15/ Reasons for Compliance

Respondents were asked for the reasons their companies try to comply with weight regulations (up to three responses were taken). The data in the following table can be compared with the problems caused by detection of violations.

	Primary (n=160) %	Secondary (n=158) %	Tertiary (n=94) %
Avoid fines	40	10	3
Desire to be law abiding	29	7	9
Safety	9	7	7
Avoid down time at MTC inspection station	6	7	3
Avoid Record	4	6	2
Avoid wear and tear on vehicles	4	12	1
Reputation	4	4	3
Threatens license	3	1	-
Economic	3	-	2
All other mentions	6	3	2
No reason/other reason	1	40	64
Don't know	-	2	5
	100	100	100

As "fines" were identified as the primary problem caused by detection of violations, avoiding fines was named by the largest group of respondents as the primary reason for complying with regulations. However, the second table indicates positive approaches to the issue of compliance; that is, compliance is not regarded just as a matter of avoiding problems. The 'desire to be law abiding" was identified as a primary reason by a significant number of respondents, and "safety" ranked ahead of "avoid down time at MTC inspection station".

B1.16/ Potential Effect of Various Actions on Compliance

The table below sets out respondents' opinions concerning the effect on compliance with weight regulations that various actions might have. "Don't know" responses are not included in the table since they, typically, represented less than 5% of the sample; the only exception was "changing the MTC regulations", where 24% of respondents said they didn't know what effect this would have. Interviewers reported that respondents were uncertain about how the regulations might be changed and, therefore, were uncertain about the effect on compliance.

	Greatly Increase Compliance	Somewhat Increase Compliance	No Effect on Compliance
Doubling costs of fines	26%	45%	28%
Increasing fines for repeat offenders	40%	46%	13%
Suspending licenses of consistent offenders	66%	22%	8%
Increasing number of inspections	26%	44%	28%
Changing hours of inspection	22%	33%	41%
Having more MTC mobile inspection units	26%	44%	28%
Changing the MTC regulations	14%	26%	34%
Assisting truckers in determining weights at time of loading	34%	40%	22%
Clearer information on MTC weight regulations	23%	37%	35%
More available information on MTC weight regulations	22%	34%	39%
Having longer down time in MTC inspection stations	21%	31%	43%

Suspending licenses of consistent offenders was judged by respondents to have the greatest potential effect; two-thirds of respondents thought this action would "greatly increase" compliance. Increasing fines for repeat offenders was second in the percentage of respondents (40%) who thought that this measure would "greatly increase" compliance; only 13% thought it would have "no effect". One-third of the respondents thought that assisting truckers in determining weights at the time of loading would "greatly increase" compliance.

For the other possible actions, 21% to 26% of respondents said each would "greatly increase" compliance, except for changing MTC regulations (14%). Again, ratings of effect on compliance of changing regulations were probably affected by vagueness as to what the action would mean.

In terms of the least expected effect on compliance, 43% of respondents judged having longer down time in MTC inspection stations as having potentially "no effect". Clearer and more available information on MTC weight regulations were rated by more than one-third of respondents (35% and 39% respectively) as having "no effect".

B.1.17/ Knowing Non-Compliance

One-quarter of respondents said yes when asked if there had been any occasion over the past year of someone in their company knowingly deciding not to comply with weight regulations. Only 4% said they didn't know.

Of the group that said there had been intentional non-compliance in their companies, over half estimated that violations resulting from such non-compliance represented 10% or less of their total weight violations. About one-third estimated that one to five percent of the company's weight violations resulted from intentional non-compliance. Thirty-nine percent of respondents thought that more than 10% of their weight violations resulted from such decisions.

The primary reasons given by respondents for, intentional non-compliance with weight regulations were "to increase revenue" (29%) and "carelessness" (24%). Last minute rush orders" were mentioned by 12% of respondents. Other reasons given were "fear of losing business if refused", "appropriate vehicle not available" and "small additional load not justifying additional vehicle". Among the secondary reasons given, "to increase revenue" was again mentioned first (10%).

B.1.18/ Knowledge Question

Respondents were asked on what the maximum allowable weights for dual axles are based. Twenty-six percent didn't know and eight percent gave an incorrect answer.

The following sections pertain to differences between sample subsets. Differences already noted are not repeated.

B.1.19/ Location (North-South) Differences

Distinctions noted between the north and south samples should be looked at cautiously because of the much smaller number of respondents in the north.

- Problems Caused by Violation Detection. Respondents from companies located in southern Ontario are more likely to have mentioned "fines" and less likely to have said "down time at an inspection station" than those from northern firms.

- Reasons for Compliance. Thirty-six percent of respondents in the south, as compared with 20% of the northern sample, said avoiding fines is the primary reason their companies try to comply with weight regulations. Avoiding down time at an inspection station was mentioned by a greater percentage of northern respondents.

- Potential Effect on Compliance. Differences in the north-south samples can be seen in the percentages estimating that various measures would have "no effect" in increasing compliance with weight regulations.

	% "No Effect"	
	North	South
Changing hours of inspection	23	47
Clearer information on MTC weight regulations	23	39
More available information on MTC weight regulations	25	44
Longer down time in MTC inspection station	55	39
More MTC mobile inspection units	38	24

B.1.20/ Goods Hauled (Bulk-Variety) Differences

There were few noticeable differences in the responses of bulk and variety carriers.

- Potential Effect on Compliance. Regarding almost all of the potential actions, a greater percentage of bulk carriers than of variety carriers were likely to say the measure would have "no effect" on compliance with weight regulations. This finding was most pronounced where the disagreement was greatest: increasing number of inspections and changing hours of inspection.

B.1.21/ "Not Comply with Weight Regulations" Differences

- Problems Caused by Violation Detection. Respondents who were aware that there had been knowing non-compliance with weight regulations in their companies were more likely to identify "fines" as the primary problem (61% as compared with 40% of those who were not aware of such non-compliance).

- Reasons for Weight Violations. "Need to increase revenue" was identified as the primary reason for weight violations by 39% of the non-compliance group, as compared with 13% of the others. One-quarter of the non-compliance group and one-third of the others said the primary reason was "difficulty in judging load distribution".

- Reasons for Compliance. Similar percentages of each group said avoiding fines was a primary reason for trying to comply with weight regulations. But 32% of the group without weight violations said that the "desire to be law abiding" was the primary reason, while 20% of those with violations gave this reason.

- Potential Effect on Compliance. Substantial differences between the groups in their estimations that a measure would have "no effect" on compliance are set out below:

	% Responding "No Effect"	
	Violators	Non-Violators
Doubling costs of fines	42	21
Increasing fines for repeat offenders	24	9
Changing hours of inspection	54	38
Clearer information on MTC weight regulations	46	30
More available information on MTC weight regulations	56	30

Violators were more likely to think that any measure would have no effect on compliance.

- Knowledge Question: Only 10% of violators, as compared with 30% of non-violators, said they didn't know what the maximum allowable weights for dual axles are based on. However, 12% of the former group answered incorrectly, while only 6% of the non-violators did so.

B.1.22/ Personnel Category (Type of Introduction) Differences

- Knowledge of MTC Regulations. The following table sets out percentages of respondents in the three personnel categories who said they did not know the regulations "too well" or "at all".

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Dispatcher	24%	13%	11%	15%	9%
Dock Supervisor/ Shipper	44%	30%	11%	32%	24%
Driver	4%	25%	17%	23%	12%

- Difficulty with Weight Regulation Compliance. Fifty-four percent of dispatchers said some weight regulations are more difficult to comply with than others, as compared with 39% of dock supervisors/shippers and 23% of drivers who thought so.

  A greater percentage of dispatchers than dock supervisors/shippers or drivers gave "difficulty in judging load distribution", as the primary reason for difficulty in complying with weight regulations.

- Problems Caused by Violation Detection. Drivers and dock supervisors/shippers were somewhat more likely than dispatchers to identify "fines" as the primary problem caused by detection. More dispatchers identified "need to rearrange load" as the primary problem than either of the other two groups.

- Reasons for Weight Violations. Drivers were much more likely than the other two groups to identify "need to increase revenue" as a primary reason for violation of weight regulations. There is common agreement about the importance of "difficulty in judging load distribution".

- Reasons for Compliance. Avoiding fines was named first by dock supervisors/shippers and drivers as the primary reason the company tries to comply with weight regulations, while the greatest percentage of dispatchers said "desire to be law abiding".

- Potential Effect on Compliance. The table below sets out the percentages of each group estimating that an action would have "no effect" on compliance with weight regulations. All of the potential actions are given because of the great differences between at least two of the three groups regarding any given measure.

	Dispatcher	Shipper/ Dock Supervisor	Driver
Doubling costs of fines	41%	30%	12%
Increasing fines for repeat offenders	19%	15%	4%
Suspending licenses of consistent offenders	9%	13%	2%
Increasing number of inspections	30%	35%	19%
Changing hours of inspection	35%	50%	37%
Having more MTC mobile inspection units	20%	35%	27%
Changing the MTC regulations	35%	26%	40%
Assisting truckers in determining weights at time of loading	15%	20%	31%
Clearer information on MTC weight regulations	26%	32%	48%
More available information on MTC weight regulations	30%	33%	56%
Having longer down time in MTC inspection stations	56%	46%	27%

- Knowing Non-Compliance. Only 17% of dock supervisors/shippers, as compared with 29% of drivers and 32% of dispatchers, said they thought there had been some occasion over the past year that someone in their company had knowingly decided not to comply with weight regulations.

  Of those reporting such occurrences, three-quarters of the drivers thought that more than 10% of the company's weight violations resulted from such a decision; most of the other two groups estimated less than 10%.

  About half of the drivers thought the primary reason for these occurrences was "to increase revenue", while about half of dock supervisors/shippers attributed them to "carelessness".

- Knowledge Question. More of the dock supervisors/shippers than of the dispatchers or drivers didn't know what the maximum allowable weights for dual axles are based on; however, the first group answered incorrectly least frequently.

B.1.23/ "Number of Times Written Up for Weight Violations" Differences

- Knowledge and Difficulty of MTC Regulations. Except regarding mechanical fitness, respondents with no weight violations were more likely than those with such violations not to know MTC regulations "too well" or "at all".

  As might have been expected, fewer respondents with weight violations regarded the weight regulations as "not too difficult" or "not difficult" to comply with.

- Responsibility for Compliance. The table below sets out the main differences between the two groups regarding who has the primary responsibility for ensuring compliance with weight regulations. Only the first responses are given.

		% Responding
Person Responsible	With Weight Violations	No Violations
Driver	30	50
Dispatcher	16	6
Operations Manager	11	3
Traffic Manager	9	16
Owner/Manager	8	16

As to who should have responsibility, respondents reporting weight violations were again less likely to say "driver" and more likely to say "dispatcher".

- Difficulty with Weight Regulation Compliance. Fifty percent of the weight violation group said some weight regulations were more difficult to comply with than others, as compared with 21% of the non-violation group who thought so.

- Problems Caused by Violation Detection. Fifty-eight percent of those who had been written up for weight violations identified "fines" as the primary problem caused by detection of violations, as compared with 35% of those who had no weight violations. The latter group were more likely to identify "down time at an inspection station" as the primary problem.

- Reasons for Weight Violations. Non-violators were twice as likely as violators to identify "need to increase revenue" as a primary reason for weight violations. However, 36% of those who had been written up for weight violations said "difficulty in judging load distribution" was the primary reason, as compared with 22% of the non-violators.

- Identification of Violators. A greater percentage (33%) of respondents reporting no weight violations identified "gypsies" as primary violators; 22% of respondents with weight violations said "gypsies".

- Reasons for Compliance. Thirty-four percent of violators, as compared with 24% of non-violators, said "desire to be law abiding" was the primary reason their company tried to comply with weight regulations.

Non-violators were somewhat more likely to mention avoiding fines as the primary reason.

- Potential Effect on Compliance. Except for "changing hours of inspection", "changing MTC regulations" "clearer information on MTC weight regulations" and "more available information on MTC weight regulations", violators were more likely to say that any given action would have "no effect" on compliance with weight regulations.

B.1.24/ Size of Company (Number of Tractors) Differences

- Knowledge of MTC Regulations. There was a general tendency for respondents from larger companies to be more familiar with MTC regulations. Smaller percentages of respondents from firms with 16 tractors or more said they didn't know the regulations "too well" or "at all" than did respondents from companies with 15 tractors or less.

- Violations. Respondents from the smallest companies (0-5 tractors) were more likely to report no violations of MTC regulations or to say they didn't know onto which category most violations fell. Companies with 6-15 tractors and those with more than 50 were much more likely to report that most of their violations were for weight.

- Responsibility for Compliance. As might have been expected, the job title of the person identified as having primary responsibility for compliance with weight regulations varied according to the size of the company. The smallest companies tended to name the owner/manager as the responsible party, while the largest firms identified the dispatcher. Among the firms with 16-50 tractors, the operations manager shared first place with the dispatcher. Among companies with 6-15 tractors the driver was named first.

  As to who should have responsibility, first place shifted to the traffic manager among the smallest firms, while the driver shared responsibility with the dispatcher among the largest companies. The dispatcher, operations manager and driver were named equally by firms with 16-50 tractors. Drivers were again named first by companies with 6-15 tractors.

- Difficulty with Weight Regulation Compliance. As the size of the firm increased, so did the percentage of respondents who thought that some weight regulations are more difficult to comply with than others.

"Difficulty in judging load distribution" was identified by firms of all sizes as the primary reason for difficulty in complying with weight regulations, but the percentages varied greatly:

- 0-5 tractors	13%
- 6-15 tractors	68%
- 16-50 tractors	40%
- 51+ tractors	63%

The smallest companies (0-5 tractors) had the greatest spread of difficulties.

A greater percentage of respondents from companies with 16-50 tractors indicated they did not have facilities for checking weights before starting a trip.

- Problems Caused by Violation Detection. "Down time at an inspection station" was identified as a primary problem by a greater percentage of respondents (40%) in the smallest firms (0-5 tractors) than by those in the largest companies (21% in companies with 51 or more tractors).

- Weight Violations. As one would expect, the general tendency was for the largest companies to have had the most weight violations.

- Reasons for Weight Violations. The larger the company, the greater the percentage of respondents identifying "difficulty in judging load distribution" as the primary reason and the smaller the percentage of respondents saying "need to increase revenue".

- Identification of Violators. The data indicates that the larger the company, the greater the percentage of respondents naming "gypsies" as primary violations of weight regulations and the smaller the percentage identifying carriers of specific kinds of product loads.

Reasons for Compliance. Only 16% of the respondents from firms with 6-15 tractors said "desire to be law abiding" was the primary reason the firm tried to comply with regulations; 38% of the "0-5 tractors" group, 30% of the "16-50" group and 33% of the "51+" group chose this reason. All of the groups were similar in their desire to avoid fines.

Effect on Compliance. There is no consistent pattern of differences in the estimations of the effect of possible actions on compliance with weight regulations. Therefore the data is set out below.

	% Responding "No Effect" by Number of Tractors			
	0-5	6-15	16-50	51+
Doubling costs of fines	19	32	40	50
Increasing fines for repeat offenders	9	11	17	29
Suspending licenses of consistent offenders	9	5	7	21
Increasing number of inspections	22	47	33	33
Changing hours of inspection	38	53	43	42
Having more MTC mobile inspection units	25	32	21	27
Changing the MTC regulations	31	21	37	33
Assisting truckers in determining weights at time of loading	22	11	17	17
Clearer information on MTC weight regulations	28	26	30	29
More available information on MTC weight regulations	28	42	27	33
Having longer down time in MTC inspection stations	38	53	60	54

- **Knowing Non-Compliance** Although the number is small, it indicates a tendency for larger companies to report knowing non-compliance with weight regulations. "Carelessness" was the most common reason given for such occurrences.

B.2/ DIMENSIONS

B.2.1/ Sample

The questionnaire concerning dimension regulations was completed by 82 respondents, 49% of them in the north and 51% in the south. Respondents from public companies represented 46% of the sample, and those from private companies 54%. "Bulk" haulers made up 52% of the sample; the rest were "variety" carriers.

The two personnel categories used for contacting appropriate respondents and analyzing data were "driver" (49% of the sample) and "traffic/operations/ equipment manager" (51% of the sample). The latter category will be referred to as "traffic manager".

Job titles represented in the sample are as follows: dispatcher (4%), operations manager (16%), traffic manager (11%), maintenance manager (2%), driver (49%), owner/manager (7%), equipment manager (1%), foreman (1%), terminal manager (1%), superintendent (5%), all "others" (2%).

The following table sets out information about the companies represented in the sample.

Number	Straight Trucks	Tractors	Trailers
0	15%		
1-5	16%	16%**	12%***
6-15	11%	11%	12%
16-50	9%*	9%	7%
51+		13%	18%
N/A (Drivers)	49%	49%	49%
Refused/D.K.	1%	2%	1%
	100%	100%	100%

* This figure represents the percentage of companies with any number of trucks over 16.

** This includes 0 tractors.

*** Includes 0 trailers.

Number of Full-Time Employees	% Responding
1-10	2
11-50	10
51-200	15
201+	21
N/A (Drivers)	49
Refuse/D.K.	4
	100

Main Types of Goods Hauled	% Responding
Lumber	21
Stone	6
Steel	11
Chemicals	11
Machinery	18
Petroleum	10
Farm Products	4
General Merchandise	15
Dry Goods	5
Foodstuffs	6
Anything & Everything	6
Plastics, Glass	2
Paper Goods	1
Liquids	1
All Other Mentions	6
	100

Years Working in Trucking Industry	% Responding
1-5	6
6-10	24
11-20	27
20+	42
Refuse/D.K.	1
	100

One-third of the drivers were driving leased trucks, and 18% of the drivers were "leased" to the company.

B.2.2/ Knowledge of MTC Regulations

Data in the table below indicates that respondents to the dimension's questionnaire felt they were about equally familiar with all of the MTC regulations, although more of them knew the mechanical fitness regulations "fairly well" and fewer "very well".

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Know very well	21%	39%	32%	34%	39%
Know fairly well	68%	51%	56%	56%	56%
Know not too well	6%	9%	12%	6%	2%
Know not at all	5%	2%	-	4%	4%
	100%	100%	100%	100%	100%

A comparison with the weights questionnaire sample shows that the dimensions group were less likely to say they were unfamiliar with the regulations.

B.2.3/ Difficulty of Complying with MTC Regulations

Similarly to the weights sample, the dimensions respondents found weights regulations the most difficult to comply with and dimensions the second most difficult. However, 26% of the dimensions group thought weights were "very difficult" or "somewhat difficult" to comply with, as compared to 39% of the weights sample who thought so. The table below gives the percentages of the dimensions sample who thought the regulations were difficult to comply with.

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Very difficult	1%	4%	10%	1%	-
Somewhat difficult	2%	15%	16%	5%	1%

Violations

The majority of respondents (52%) said that most of the violations their companies had received in the past two years fell into the weights category. About one quarter of the overall sample had had no violations, but as with the weights sample, a higher proportion of drivers (45%) said there had been none. Twelve percent named dimensions, 4% said mechanical fitness, 2% said driver or vehicle licensing and 4% didn't know.

B.2.4/ Responsibility for Compliance with Dimensions Regulations

Dimensions respondents had opinions very similar to those of the weights respondents as to who **has** and who **should have** primary responsibility for regulation compliance. Again, the driver was named by most respondents, with drivers heavily influencing this result. Operations managers were seen as having somewhat more responsibility for dimensions than they had been for weights.

The table below sets out only the percentages for "primary" responsibility.

Job Title	% Has Responsibility	% Should Have Responsibility
Driver	40	38
Operations Manager	13	7
Dispatcher	11	11
Owner/Manager	10	12
Traffic Manager	9	9
Maintenance Manager	2	2
Shipper	2	5
Superintendent	2	2
Maintenance Mechanic	1	1
Loading Personnel/Dock Supervisor	1	2
Foreman	1	-
Fleet Supervisor	1	2
Equipment Manager	-	1
All Other Mentions	4	5
No One Responsible	1	1

B.2.5/ Difficulty with Dimensions Regulation Compliance

One-quarter of the respondents said some dimension regulations were more difficult to comply with than others. Height regulations were mentioned most frequently as being more difficult.

The following table sets out the reasons given for difficulty in complying with dimension regulations.

	Primary (n=82) %	Secondary (n=44) %	Tertiary (n=8) %
Difficulty in measuring dimensions	16	5	-
Equipment manufacturer's error	5	2	-
Obtaining special permits	5	-	-
Lack of knowledge of MTC dimension regulations	4	-	-
Shippers requirements	4	-	-
Inconsistent measurement/inspection practices	4	-	-
Legislation difficult to understand	2	2	-
Carelessness	2	-	13
Need to increase revenue	2	2	-
Nature of load	2	-	-
Shifting cargo	2	-	-
Lack of appropriate vehicle	1	5	13
All other mentions	4	2	-
No reason	40	80	75
Don't know	6	2	-
	100	100	100

It is important to note that 40% of respondents said there was no reason for difficulty in complying with the regulations. For the others, the primary reason (16%) was difficulty in measuring dimensions; this corresponds to the 12% of the sample who said "no" when asked if a vehicle and load could be easily checked before starting a trip to make sure it meets MTC dimensions regulations.

B.2.6/ Probability of Inspection

Respondents were asked, "We're interested in what the probability is of a truck being inspected at an MTC inspection station during a trip.

Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to actually be inspected for dimensions at an inspection station in Ontario during the trip?" Responses are set out below, grouped by percentage ranges.

% Probability of Inspection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	4%	10%	5%	24%
1-25	54%	46%	55%	33%
26-50	9%	9%	18%	5%
51-75	5%	1%	1%	-
76-99	2%	1%	2%	-
100	-	1%	1%	-
Don't Know	27%	32%	17%	38%
	100%	100%	100%	100%
Mean	19.0%	16.3%	22.4%	7.5%

B.2.7/ Probability of Violation Detection

Respondents were asked "We're interested in what the probability is of a dimensions violation actually being **detected** during a trip. Assuming 100 trucks on average trips are in violation of the dimensions regulations, how many trucks out of 100 would you say are likely to be detected at an inspection station in Ontario as being in violation of the dimensions? Responses are set out below, grouped by percentage ranges.

% Probability of Detection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	4%	12%	5%	21%
1-25	28%	23%	29%	29%
26-50	16%	13%	18%	6%
51-75	6%	7%	10%	1%
76-99	16%	5%	13%	5%
100	6%	6%	6%	4%
Don't Know	26%	33%	18%	34%
	100%	100%	100%	100%
Mean	43.7%	36.1%	44.0%	23.2%

B.2.8/ Frequency of Dimension Violations

The following table sets out respondents' estimates of how frequently loads are actually in violation of dimension regulations.

% Frequency of Violation	% Responding
0	2%
1-10	62%
11-20	10%
21-30	9%
31-50	2%
51-75	1%
76-99	-
100	-
Don't Know	13%
	100%

Mean - 10.7%

B.2.9/ Commentary

According to the table at the top of page 113, Section B.2.6, the average reported probability of a truck being inspected (while travelling on a major highway) at an MTC Inspection Station is 22.4%; i.e., on average 22 trucks out of 100 are actually likely to be inspected for dimensions violation.

Respondents opinions are that on average "loads are actually in violation of dimension regulations" 10.7% of the time; i.e., 11 out of 100 trucks are, on average, in violation of dimension regulations.

This can be applied as follows: in respondent's opinions, 22 trucks out of 100 are likely to be inspected for dimension violations. Of these 22 inspected, 11% (see above) are on average in violation, i.e., 2 of the 22 inspected trucks are in violation.

According to the table at the bottom of page 113, Section B.2.7, the probability of a truck in violation of dimension regulations being detected at an inspection station is 44%; i.e., on average, 44% of trucks which are in violation are, in the opinion of respondents, likely to be detected.

This can be applied as follows: if 2 of the 22 trucks inspected (above) are actually in violation then one of these will be detected.

Respondents' opinions are that if 100 trucks are travelling on major highways in Ontario then the probability is that 11 of these will be in violation of dimension regulations and that one of them will be detected.[1]

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[1] SOME RESERVATIONS

Although on the face of it the analysis above seems reasonable, readers should interpret it cautiously.

Bear in mind that the three pieces of data involved were collected discretely:

- respondents' opinions of loads in violation;
- a respondents' opinions of the probability of a truck in violation being detected and;
- respondents' opinions of the frequency of trucks in violation.

The three questions were not grouped together and asked as a sequence, in the interview (as the analysis would suggest) but were distributed through the questionnaire, separated by the other questions. It is, therefore possible that some respondents may have been thinking of detection rate when they responded to the inspection question and vice versa.

It is recommended that in future research in this area, a design be developed to test, without equivocation, the validty of the above analysis and our tentative interpretation.

B.2.10/ Problems Caused by Violation Detection

The table below sets out the problems cited by respondents as resulting from detection of weight violations at an inspection station.

	Primary (n=82) %	Secondary (n=61) %	Tertiary (n=22) %
Fine	33	10	-
Down time at inspection station	31	13	5
Need to rearrange load	6	2	-
Need to transfer load	1	3	9
Reputation	1	2	14
Increased cost	-	3	-
Problem with customer	-	2	5
All other mentions	2	2	5
None	22	64	60
Don't Know	4	-	5
	100	100	100

The percentage of dimensions respondents mentioning "down time" as a primary problem was the same as that of the weights respondents. The significant differences between the two groups were that the dimensions sample was much more likely to say that detection would cause no problems and less likely to cite "fine" as a primary problem.

B.2.11/ Number of Dimensions Violations

As for the weights questionnaire, driver responses refer to the number of times they had been written up for dimensions violations in the past year, while responses from the other personnel category refer to the company's violations. Thus the number of violations are affected downwards by the drivers.

Nonetheless, 67% of the total sample reported no violations, as compared with 39% of the weight sample. Most of those reporting violations, in both samples, said they had been written up 1-5 times.

B.2.12/ Reasons for Dimensions Violations

The table below sets out the "primary" reasons that most violations of dimensions regulations occur.

Primary Reason	% Responding
Carelessness	23
Need to increase revenue	16
Difficulties in measuring dimensions	11
Lack of knowledge of MTC dimension regulations	10
Shippers requirements	9
Nature of load	4
Shifting cargo	4
Equipment manufacturer's error	2
Lack of appropriate vehicle	2
Inconsistent measurement/inspection practices	2
Legislation difficult to understand	1
Obtaining special permits	1
All other mentions	2
No reason	4
Don't know	9
	100

It is consistent with other findings that difficulty in measuring dimensions not as great a problem for this group as is judging load distribution is for the weights sample. Among dimension respondents, "carelessness" is the major theme, carried through the secondary and tertiary reasons for violations. "Need to increase revenue" is second, in rank order, on the lists of both groups, but it is cited somewhat less often by the dimensions sample.

B.2.13/ Identification of Violators

The primary violators of dimensions regulations were the same as those identified by the weights sample: gypsies (24%) and carriers of specific kinds of product loads (18%). The other types of operators named by the weights sample were also mentioned by the dimensions group in similar proportions.

B.2.14/ Reasons for Compliance

The table below indicates that the dimensions survey had opinions similar to those of the weights survey as to the reasons their companies try to comply with dimensions regulations.

	Primary (n=82) %	Secondary (n=79) %	Tertiary (n=47) %
Avoid fines	29	10	2
Desire to be law abiding	23	14	4
Safety	12	15	4
Down time at inspection station	7	7	2
Avoid record	6	5	9
Reputation	6	5	9
Threatens license	2	3	-
All other mentions	10	-	4
No reason	1	41	66
Don't Know	2	-	2
	100	100	100

While "down time" had been cited as the primary problem resulting from violation detection, it ranked only fourth as a reason for trying to comply with regulations.

B.2.15/ Potential Effect of Various Actions on Compliance

As for the weights survey, the only significant group of "don't know" responses (27%) pertained to "changing the MTC regulations".

	Greatly Increase Compliance	Somewhat Increase Compliance	No Effect on Compliance
Doubling costs of fines	26%	46%	24%
Increasing fines for repeat offenders	40%	56%	4%
Suspending licenses of consistent offenders	71%	26%	2%
Increasing number of inspections	24%	50%	24%
Changing hours of inspection	16%	38%	44%
Having more MTC mobile inspection units	20%	54%	24%
Changing the MTC regulations	9%	28%	37%
Assisting truckers in determining dimensions at time of loading	18%	42%	35%
Clearer information on MTC dimensions regulations	28%	23%	43%
More available information on MTC dimensions regulations	26%	26%	43%
Having longer down time in MTC inspection stations	17%	35%	42%

The dimensions survey showed agreement with the weights sample concerning the relative effectiveness of the various measures, except in one instance. While 34% of the weights survey thought that assisting truckers in determining weights at loading would "greatly increase" compliance, only 18% of the dimensions group thought that assisting truckers in determining dimensions would have this effect.

B.2.16/ Knowing Non-Compliance

Thirty-one percent of the respondents said they thought there had been some occasion over the past year when someone in their company had knowingly decided not to comply with dimensions regulations. Over half of these respondents (59%) thought such decisions would account for over 10% of the company's dimensions violations.

As with the weights sample, the primary reason given for such decisions was "to increase revenue", followed by "carelessness" and "fear of losing business if refuse".

B.2.17/ Knowledge Question

Respondents were asked, "What is the maximum allowable width of a load without a special permit?" Seventy-one percent gave the correct answer and 20% didn't know.

B.3/ MECHANICAL FITNESS

B.3.1/ Sample

Eighty-one respondents completed the mechanical fitness questionnaire, 52% of them in the north and 48% in the south. Seventy percent of the respondents were associated with public companies and the rest were with private firms. Variety haulers were represented by 51% of the sample and bulk haulers by 49%.

The personnel categories used for identification and analysis purposes were "maintenance manager" (35% of the sample), "mechanic" (36%) and "driver" (30%). The actual job titles of respondents and the percentages of the sample they represent were as follows: driver (30%), maintenance manager (21%), maintenance mechanic (17%), owner/manager (11%), foreman (11%), equipment manager (1%), superintendent (1%), all "other" mentions (3%).

The following tables set out more information about the companies in the sample.

	Straight	Tractors	Trailers
0	11%		
1-5	19%	17%**	15%***
6-15	16%	17%	11%
16-50	24%*	19%	21%
51+		16%	22%
N/A (Drivers)	30%	30%	30%
Refused/D.K.	1%	1%	1%
	100%	100%	100%

* This figure represents the percentage of companies with any number of straight trucks over 16.

** Includes 0 tractors.

*** Includes 0 trailers.

Number of Full-Time Employees	% Responding
1-10	6
11-50	24
51-200	21
201+	11
N/A (Drivers)	30
Refuse/D.K.	9
	100

Main Types of Goods Hauled	% Responding
Lumber	12
Stone	17
Steel	11
Chemicals	9
Machinery	12
Petroleum	11
Farm Products	4
General Merchandise	19
Dry Goods	-
Foodstuffs	9
Anything & Everything	9
Plastics, Glass	-
Paper Goods	1
Liquids	3
All Other Mentions	7
	100

Years Working in Trucking Industry	% Responding
1-5	12
6-10	14
11-20	33
20+	41
	100

One third of the drivers were driving leased trucks and one-quarter of the drivers were "leased" to the company.

B.3.2/ Knowledge of MTC Regulations

The table below sets out how well respondents thought they knew the various MTC regulations.

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Know very well	30%	21%	26%	19%	33%
Know fairly well	61%	52%	49%	51%	43%
Know not too well	7%	19%	16%	16%	11%
Know not at all	3%	9%	9%	15%	12%
	100%	100%	100%	100%	100%

This sample of respondents was more likely than either of the weights or the dimensions groups to say they were not familiar with MTC regulations, except in the area of mechanical fitness.

B.3.3/ Difficulty of Complying with MTC Regulations

Data in the table below indicates that mechanical fitness respondents were similar to the weights and dimensions groups in finding driver licensing regulations least difficult to comply with. However, greater percentages of the MF group than of the others reported some difficulty with the other regulation areas.

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Very difficult to comply	3%	7%	19%	3%	1%
Somewhat difficult to comply	15%	19%	22%	10%	4%

This group also thought that weight regulations were the most difficult to comply with.

Violations

As with the other two samples, the majority (56%) of the mechanical fitness group said most of their company's violations in the past two years were in the weights category. Twenty percent said there had been no violations; again, this was influenced by the much higher proportion of drivers who reported no violations. Seven percent said most violations had been in the area of mechanical fitness, 6% said weights and only 3% said vehicle/driver licensing.

3.4/ Responsibility for Compliance with Mechanical Fitness Regulations

The table below sets out responses concerning who **has** and who **should have** "primary" responsibility for compliance with mechanical fitness regulations. Although the driver is again mentioned first (in rank order), a somewhat smaller percentage of MF respondents said "driver" than either of the other two samples.

	Has Responsibility %	Should Have Responsibility %
Driver	30	27
Owner/Manager	20	22
Maintenance manager	16	22
Maintenance mechanic	12	12
Foreman	12	7
Fleet supervisor	3	1
Dispatcher	1	1
Operations manager	1	1
Traffic manager	1	1
Superintendent	1	1
All other mentions	1	1
No one responsible	1	1
	100	100

Drivers again saw themselves as having primary responsibility (71%), while "maintenance managers" also tended to name themselves first (32%). "Mechanics" named foremen first (24%) and then themselves and owner/managers (21% each).

B.3.5/ Difficulty With Mechanical Fitness Regulation Compliance

Only 15% of respondents thought that some mechanical fitness regulations were more difficult to comply with than others; the single largest area of difficulty mentioned was lamps.

Fifty-two percent of the respondents could not identify a reason for difficulty in complying with mechanical fitness regulations; among the others, no single reason stood out. "Difficulty in judging fitness" and "need to increase revenue" were each mentioned by 7% of the sample; 6% said "inconsistent judgements by MTC inspectors" and 5% said "carelessness".

B.3.6/ Method of Checking Compliance

Respondents were asked how they ensured that the vehicle complied with mechanical fitness regulations. Sixty-three percent said regular inspection, 36% said interval maintenance and 20% said driver reports.

B.3.7/ Probability of Inspection

Respondents were asked, "We're interested in what the probability is of a truck being **inspected** at an MTC inspection station during a trip. Assuming a 100 trucks on an average trip, how many trucks out of the 100 would you say are likely to actually be inspected for mechanical fitness at an inspection station in Ontario during the trip?" Responses are set out below, grouped by percentage ranges.

Similarly to the dimensions sample, over half of the mechanical fitness group thought the probability of inspection, in any given location, was 25% or less.

% Probability of Inspection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	4%	5%	1%	26%
1-25	58%	51%	62%	41%
26-50	6%	11%	14%	10%
51-75	5%	3%	6%	1%
76-99	3%	1%	1%	-
100	3%	3%	3%	-
Don't Know	22%	27%	14%	22%
	100%	100%	100%	100%
Mean	20.8%	18.6%	21.5%	9.4%

B.3.8/ Probability of Violation Detection

Respondents were asked "We're interested in what the probability is of a mechanical fitness violation actually being **detected** during a trip. Assuming a 100 trucks on an average trip are in violation of the mechanical fitness regulations, how many trucks out of the 100 would you say are likely to be detected at an inspection station in Ontario as being in violation of the mechanical fitness regulations?" Responses are set out below, grouped by percentage ranges.

% Probability of Detection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	7%	5%	6%	21%
1-25	36%	40%	40%	36%
26-50	15%	16%	16%	11%
51-75	3%	5%	7%	3%
76-99	9%	5%	10%	1%
100	3%	1%	4%	3%
Don't Know	28%	28%	17%	26%
	100%	100%	100%	100%
Mean	31.1%	28.5%	35.4%	17.6%

B.3.9/ Frequency of Mechanical Fitness Violations

The following table sets out respondents' estimates of how frequently trucks are actually in violation of mechanical fitness regulations.

% Frequency of Violation	
0	3%
1-10	40%
11-20	12%
21-30	12%
31-50	12%
51-75	6%
76-99	7%
100	1%
Don't Know	6%
	100%
Mean	27.9%

B.3.10/ Commentary

The table on the top of page 126, Section B.3.7 shows that the average reported probability of a truck being inspected (on a major highway) at a MTC Inspection Station is 21.5% i.e., on average, 22 trucks out of 100 are actually likely to be inspected for mechanical fitness violations.

Respondents' opinions are that on average, "trucks are actually in violation of mechanical fitness regulations" 28% of the time. i.e., 28 out of 100 trucks are, on average, in violations of weight regulations.

This data can be applied as follows:

Twenty-two trucks out of 100 are likely to be inspected for mechanical fitness violations. Of these 22 inspected 28% (see above) are, in respondent's opinion, on average in violation i.e., 6 of the 22 inspected trucks are in violation.

The table at the bottom of page 126, Section B.3.8 shows that in respondent's opinion the probability of a truck which is in violation of weight regulations being detected at an inspection station is 35% i.e., on average, 35% of trucks which are in violation are, in the opinion of respondents, likely to be detected.

This can be applied as follows:

- If 6 of the 22 trucks inspected (above) are actually in violation then 2 of these, i.e., 35%, will be detected.

Respondents' opinions are that if 100 trucks are travelling on major highways in Ontario then the probability is that 28 of these will be in violation of mechanical fitness regulations and that two of these trucks will be detected.[1]

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[1] SOME RESERVATIONS

Although on the face of it the analysis above seems reasonable, readers should interpret it cautiously.

Bear in mind that the three pieces of data involved were collected discretely:

- respondents' opinions of loads in violation;
- a respondents' opinions of the probability of a truck in violation being detected; and
- respondents' opinions of the frequency of trucks in violation.

The three questions were not grouped together and asked as a sequence, in the interview (as the analysis would suggest) but were distributed through the questionnaire, separated by the other questions. It is, therefore possible that some respondents may have been thinking of detection rate when they responded to the inspection question and vice versa.

It is recommended that in future research in this area, a design be developed to test, without equivocation, the validty of the above analysis and our tentative interpretation.

It should be noted here that while 43% of this group thought that trucks were in violation of the MF regulations 10% or less of the time, over half of the weights group and almost two-thirds of the dimensions group estimated the same frequency concerning their respective violations. Neither of the latter two groups had any respondents estimating over 75% frequency of violation.

B.3.11/ Problems Caused by Violation Detection

The table below sets out the problems cited by respondents as resulting from detection of mechanical fitness violations.

	Primary (n=81) %	Secondary (n=61) %	Tertiary (n=29) %
Down time at inspection station	49	3	3
Down time at repair shop	11	25	-
Fine	6	7	7
Reputation	3	2	-
Delay	3	-	10
Lost revenue	1	2	3
Safety	1	-	-
Cost to effect repairs	1	7	3
Effects on license	-	2	3
All other mentions	-	2	-
None	22	53	66
Don't Know	3	-	3
	100	100	100

"Down time", either in an inspection station or in a repair shop, is obviously a far more significant problem with regard to mechanical fitness violations than with weights or dimensions violations.

B.3.12/ Number of Mechanical Fitness Violations

As with the other two samples, the highest percentage of respondents (47%) said they or their companies (depending on the personnel category of the respondent) had not been written up for mechanical violations in the past year. Thirty-three percent had been written up 1-5 times. Only 6% had been written up over 20 times.

B.3.13/ Reasons for Mechanical Fitness Violations

Most respondents only gave one reason for the occurrence of mechanical fitness violations, and as with dimensions group, the primary reason given was "carelessness". "Lack of knowledge of MTC regulations" was not given as a response.

Primary Reason	% Responding
Carelessness	33
Lack of maintenance	16
Need to increase revenue	9
Temporary repairs on the road	9*
Lack of necessary inspection equipment	5
Inconsistent judgements by MTC inspectors	5
Lights/lamps/reflectors	5*
Electrical malfunction	3*
minor problems	3*
Difficulty in judging fitness	1
All other mentions	9
No reason	4
	100

*It would appear that mechanical problems on route account for a significant percentage of violations.

B.3.14/ Identification of Violators

Again, "gypsies" were identified as the primary violators of regulations (by 21% of the respondents). Of the other operators, only "brokers"

(12%) were mentioned by more than 10% of the sample; 11% said there was "no general type" of violator. "Small operators" and "private truckers" were each mentioned as primary violators by 9% of respondents and were identified first and second, respectively, by respondents naming secondary violators.

B.3.15/ Reasons for Compliance

While "fines" and the "desire to be law abiding" were the primary reasons for compliance among the weights and dimensions samples, they figured relatively low in importance for mechanical fitness respondents; safety was the main issue for this group. Only the "primary" reasons are given below; "safety" and "avoid breakdown" were repeated as the most important reasons in the secondary list, and "avoid down time in repair shop" ranked first among the tertiary reasons.

Primary Reason	% Responding
Safety	47
Avoid breakdown	14
Avoid down time at inspection station	10
Reputation	10
Avoid fines	6
Avoid down time in repair shop	4
Desire to be law abiding	3
Provide good service	3
Economic	3
Avoid records	1
All other mentions	1
	100

B.3.16/ Potential Effect of Various Actions on Compliance

The table below sets out respondents' opinions about the effect various measures would have on compliance with mechanical fitness regulations.

	Greatly Increase Compliance	Somewhat Increase Compliance	No Effect on Compl.
Doubling costs of fines	24%	52%	24%
Increasing fines for repeat offenders	44%	47%	7%
Suspending licenses of consistent offenders	75%	20%	4%
Increasing number of inspections	35%	41%	24%
Changing hours of inspection	10%	38%	48%
Having more MTC mobile inspection units	26%	53%	21%
Changing the MTC regulations	5%	19%	41%
Assisting truckers in routine inspections	35%	35%	31%
Clearer information on MTC mechanical fitness regulations	31%	27%	41%
More available information on MTC mechanical fitness regulations	36%	26%	38%
Having longer down time in MTC inspection stations	19%	38%	43%

Again, "don't know" responses were only significant for "changing MTC regulations" (36%) and previous comments apply.

There was relative agreement between this sample and the previous two groups as to the relative effectiveness of various measures. Increasing fines and/or suspending licenses of repeat offenders were seen as having the greatest impact; having clear and/or more information on regulations, having longer down time and changing hours of inspection were seen as having least potential effect.

B.3.17/ Knowing Non-Compliance

One-fifth of the respondents thought there had been some occasion over the past year when someone in the company had decided not to comply with MF regulations. Of this group, about two-thirds thought that such decisions accounted for somewhere over 10% of the company's MF violations. "Last minute orders" and "avoiding delay" accounted for half of the "primary" reasons given for such occurrences.

B.3.18/ Knowledge Question

Respondents were asked if vehicles are required to display a certificate or permit which indicates that inspection requirements and performance standards set by the MTC have been met. Forty-six percent said yes, 49% said no and 5% said they didn't know.

B.4/ VEHICLE/DRIVER LICENSING

B.4.1/ Sample

The vehicle/driver licensing questionnaire was completed by 86 respondents, 49% of them in the north and 51% in the south. Fifty-seven per cent of the survey were associated with public companies and 43% were with private firms. Bulk haulers made up 52% of the survey and variety haulers the rest.

The personnel categories used for identification and analysis were "driver" (33% of the survey), "licensing clerk" (30%), and "traffic/operations/equipment manager" (37%); the last category will be referred to as "traffic manager".

The actual job titles represented in the survey are as follows: operations manager (7%), traffic manager (8%), maintenance mechanic (1%), maintenance manager (1%), driver (33%), licensing clerk (7%), owner/manager (34%), shipper (1%), equipment manager (1%), all "other" mentions (5%).

The following tables set out more information about the companies in the survey.

Number	Straight Trucks	Tractors	Trailers
0	19%		
1-5	22%	23%**	17%***
6-15	14%	8%	12%
16-50	13%*	24%	13%
51+		12%	26%
N/A Drivers	33%	33%	33%
Refused/D.K.	-	-	-
	100%	100%	100%

* This figure represents the percentage of companies with any number of straight trucks over 16.

** Includes 0 tractors.

*** Includes 0 trailers.

Number of Full-Time Employees	% Responding
1-10	8
11-50	23
51-200	15
201+	17
N/A Drivers	33
Refuse/D.K.	4
	100

Main Types of Goods Hauled	% Responding
Lumber	9
Stone	9
Steel	9
Chemicals	12
Machinery	16
Petroleum	11
Farm Products	7
General Merchandise	22
Dry Goods	2
Foodstuffs	8
Anything & Everything	2
Plastics, Glass	-
Paper Goods	5
Liquids	6
All Other Mentions	12
	100

Years Working in Trucking Industry	% Responding
1-5	15
6-10	15
11-20	40
20+	30
	100

B.4.2/ Knowledge of MTC Regulations

The table below sets out how well respondents said they knew MTC regulations.

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Know very well	22%	26%	45%	47%	45%
Know fairly well	59%	49%	41%	43%	50%
Know not too well	12%	16%	13%	9%	5%
Know not at all	7%	9%	1%	1%	-
	100%	100%	100%	100%	100%

This group was most familiar with the driver licensing regulations and least familiar with dimensions and mechanical fitness regulations.

B.4.3/ Difficulty of Complying with MTC Regulations

The table below sets out percentages of respondents who thought the regulations were difficult to comply with.

	Mechanical Fitness	Dimensions	Weights	Vehicle Licensing	Driver Licensing
Very difficult	4%	6%	17%	2%	1%
Somewhat difficult	13%	6%	26%	2%	4%

Again, vehicle and driver licensing were seen as the least difficult regulations to comply with and weights as the most difficult. Of the four populations surveyed, this group had the least difficulty with dimensions regulations.

B.4.4/ Checking Compliance

Respondents were asked if their organizations routinely checked compliance with licensing regulations before a truck starts on a trip. Sixty-two percent said yes and almost three-quarters of these respondents said that both driver and vehicle licenses were checked. One-quarter of them said only the vehicle licenses were checked.

Violations

Twenty-four percent of these surveyed said their company had had no violations in the past two years; again, this was influenced by the drivers, 54% of whom reported no violations. As with the other surveys, the largest proportion of respondents (55%) said most violations had been in the weights area. The others were divided almost evenly among the other three regulation areas.

B.4.5/ Responsibility for Compliance with Licensing Regulations

Respondents were asked who **has** and who **should have** responsibility for compliance with vehicle licensing regulations and with driver licensing regulations. The two sets of data for "primary" responsibility are combined in the table below for ease of comparison.

	Has Responsibility		Should Have Responsibility	
	Vehicle/Driver Licensing		Vehicle/Driver Licensing	
Owner/Manager	41%	35%	43%	37%
Driver	20%	22%	14%	17%
Operations Manager	9%	9%	15%	13%
Traffic Manager	8%	6%	9%	9%
Dispatcher	5%	4%	4%	6%
Licensing Clerk	2%	4%	6%	6%
Maintenance Mechanic	2%	2%	1%	1%
Maintenance Manager	1%	-	1%	-
Terminal Manager	1%	2%	1%	4%
Personnel Department	1%	2%	-	1%
Equipment Manager	-	1%	-	1%
MTC or Ministry	-	1%	2%	-
All other mentions	8%	12%	4%	5%
No one responsible	1%	-	-	-
	100%	100%	100%	100%

Respondents' opinions as to who has and who should have responsibility are virtually the same for driver and vehicle licensing.

The licensing survey was the only one of the four groups to say that the owner/manager had first responsibility. However, as with the other three samples, drivers in the licensing group placed primary responsibility with themselves (61%).

B.4.6/ Difficulty with Licensing Compliance

Only 17% of those surveyed thought that some licensing regulations were more difficult to comply with than others. Opinions were completely divided in the identification of such regulations.

Like the mechanical fitness survey, the majority (55%) of licensing respondents could give no reason for difficulty in complying with the concerned regulations. The largest single group (9%) mentioned "cost or time involved in getting or renewing license". "Lack of knowledge of MTC regulations" was cited by 5% of those surveyed.

B.4.7/ Probability of Inspection

Respondents were asked, "We're interested in what the probability is of a truck being inspected at an MTC inspection station during a trip. Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for driver and vehicle licensing at an inspection station in Ontario during the trip?" Responses are set out below, grouped by percentage ranges.

As with the dimensions and mechanical fitness surveys, over half of the licensing survey thought the probability of inspection, in any given location, was 25% or less.

% Probability of Inspection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	5%	8%	5%	30%
1-25	57%	50%	62%	44%
26-50	12%	9%	14%	5%
51-75	4%	2%	4%	2%
76-99	5%	2%	5%	1%
100	2%	-%	2%	-
Don't Know	16%	28%	9%	17%
	100%	100%	100%	100%
Mean	21.4%	16.4%	20.5%	9.1%

B.4.8/ Probability of Violation Detection

Respondents were asked "We're interested in what the probability is of a driver and vehicle licensing violation actually being **detected** during a trip. Assuming 100 trucks on an average trips are in violation of the licensing regulations, how many trucks out of the 100 would you say are likely to be detected at an inspection station in Ontario as being in violation of these regulations?" Responses are set out below, grouped by percentage ranges.

% Probability of Detection	In Central Ontario	In Northern Ontario	On Major Highways	On Minor Highways
0	6%	11%	8%	22%
1-25	50%	44%	52%	47%
26-50	14%	12%	17%	7%
51-75	6%	6%	7%	1%
76-99	2%	1%	2%	1%
100	6%	4%	5%	2%
Don't Know	16%	23%	8%	20%
	100%	100%	100%	100%
Mean	26.8%	22.0%	25.7%	12.5%

B.4.9/ Frequency of Licensing Violations

The following table sets out respondents' estimates of how frequently loads are in violation of licensing regulations.

% Frequency of Violation	% Responding
0	5
1-10	59
11-20	13
21-30	7
31-50	7
51-75	-
76-99	-
100	1
Don't Know	8
	100
Mean	12.8%

B.4.10/ Commentary

The table on the top of page 139, Section B.4.7 shows that the average reported probability of a truck being inspected (on a major highway) at an MTC Inspection Station is 20.5% i.e., on average, 21 trucks out of 100 are likely to be inspected for licensing compliance.

Respondents' opinions are that on average "loads are in violation of licensing regulations" 12.8% of the time i.e., 13 out of 100 trucks are, on average, in violation of licensing regulations.

We can apply this as follows:

- Twenty-one trucks out of 100 are likely to be inspected for licensing compliance. Of the 21 inspected, 13% (see above) are, in respondent's opinion, on average, in violation i.e., 3 of the 21 inspected trucks are likely to be in violation.

The table at the bottom of page 139, Section B.4.8 shows that respondents' opinions indicate that the probability of a truck which has a licensing violation being detected at an inspection station is 25.7% i.e., on average, 26% of trucks which are in violation are, in the opinion of respondents, likely to be detected.

This can be applied as follows:

- If three of the 21 trucks inspected are actually in violation then one of these will be detected as a violator.

Respondents' opinions are that if 100 trucks are travelling on major highways in Ontario, the probability is that 13 of these will have licensing violations and that one of them will be detected.[1]

The licensing survey was similar to the weights and dimensions groups in the high proportion estimating a violation frequency of less than 10%.

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[1] SOME RESERVATIONS

Although on the face of it the analysis above seems reasonable, readers should interpret it cautiously.

Bear in mind that the three pieces of data involved were collected discretely:

- respondents' opinions of loads in violation;
- a respondents' opinions of the probability of a truck in violation being detected; and
- respondents' opinions of the frequency of trucks in violation.

The three questions were not grouped together and asked as a sequence, in the interview (as the analysis would suggest) but were distributed through the questionnaire, separated by the other questions. It is, therefore possible that some respondents may have been thinking of detection rate when they responded to the inspection question and vice versa.

It is recommended that in future research in this area, a design be developed to test, without equivocation, the validty of the above analysis and our tentative interpretation.

Taking data from the preceding three tables respondents' average perceptions of inspection and detection for driver and vehicle licensing violations can be calculated. If 100 trucks are travelling on major highways in Ontario, the probability is that 21 of these trucks will be inspected (20.5%); three of these trucks will be in violation of driver and vehicle licensing regulations (12.8%); one of these will be detected as a violator (25.7%).

B.4.11/ Problems Caused by Violation Detection

The problems cited by respondents as resulting from the detection of violations are set out below.

	Primary (n=86) %	Secondary (n=69) %	Tertiary (n=36) %
Down time at inspection station	42	9	3
Fine	20	19	6
Suspension or loss of license	9	6	-
Need to send someone out	4	9	-
Reputation	1	4	-
All other mentions	5	6	3
None	16	48	78
Don't Know	4	-	11
	100	100	100

"Down time" was the most significant problem for this survey, as it was for the mechanical fitness survey. However, fines figured more prominently as a secondary concern for this group than for the MF sample.

B.4.12/ Number of Licensing Violations

The majority (67%) of respondents said they or their companies (depending on the respondent) had not been written up for licensing violations in the past year. Again, most of those who had been written up reported 1-5 violations.

B.4.13/ Reasons for Licensing Violations

As with the dimensions and mechanical fitness surveys, "carelessness" was given most often as the "primary" reason for the occurrence of violations. But among the licensing survey there was the same spread of opinion about reasons for violations as about reasons for difficulty with licensing compliance. This is consistent with the very low percentages of respondents thinking licensing regulations were difficulty to comply with.

Primary Reason	% Responding
Carelessness	15
Cost or time involved in getting or renewing license	13
Forget to review expired license	8
Lack of knowledge of MTC licensing regulations	5
Need to increase revenue	5
Driver's fault	5
Difficulty in judging necessary licensing	4
Unable to check licensing	4
Legislation difficult to understand	1
All other mentions	23
No reason	9
Don't know	9
	100

B4.14/ Identification of Violators

"Gypsies" were, again, identified as the primary violators by the largest percentage (35%) of respondents, with "small operators" ranking second (15%) and "private truckers" third (9%). Carriers of specified kinds of product loads ranked first among respondents naming secondary violators.

B4.15/ Reasons for Compliance

The licensing survey was the only group to rank "desire to be law abiding" first as a reason for compliance with regulations. Only the "primary" reasons are listed below.

Primary Reason	% Responding
Desire to be law abiding	24
Avoid fines	22
Safety	17
Reputation	12
Avoid down time at MTC inspection station	7
Avoid record	7
Avoid hassle	1
All other mentions	6
No reason	1
Don't Know	2
	100

"Fines", "law abiding" and "down time" ranked first, second and third among those giving second reasons.

B.4.16/ Potential Effect of Various Actions on Compliance

The following table sets out respondents' opinions about the effect various measures would have on compliance with licensing regulations.

	Greatly Increase Compliance	Somewhat Increase Compliance	No Effect on Compliance
Doubling costs of fines	21%	43%	35%
Increasing fines for repeat offenders	38%	49%	13%
Suspending licenses of consistent offenders	69%	21%	8%
Increasing number of inspections	29%	43%	26%
Changing hours of inspection	14%	37%	45%
Having more MTC mobile inspection units	30%	44%	23%
Changing the MTC regulations	6%	24%	40%
Assisting truckers in determining appropriate license	21%	29%	44%
Clearer information on MTC licensing regulations	24%	29%	43%
More available information on MTC licensing regulations	19%	34%	43%
Having longer down time in MTC inspection stations	27%	33%	40%

Previous comments regarding "don't know" responses to this question apply here. The licensing survey agreed with the others about the relative effectiveness of the various measures, except for "assisting truckers in determining appropriate license". Of the types of trucker assistance suggested to the four surveys, "determining appropriate license" ranked last in potential effect on compliance.

B.4.17/ Knowing Non-Compliance

Among the four samples, the licensing group had the smallest percentages reporting that in the past year someone in their company had decided not to comply with regulations on some occasion: 13% said "yes" regarding driver licensing and 11% said "yes" regarding vehicle licensing. Thirty-nine per cent of those reporting such occurrences said that more than 10% of the company's violations resulted from such decisions. The same proportion of respondents gave "last minute rush orders" as the primary reason for such occurrences.

B4.18/ Knowledge Question

Respondents were asked what license/permits are required to be on board during a trip. Responses are given below:

License/Permits	% Responding
P.C.V. License (if required)	55
Driver's License	36
Vehicle License	31
Tractor License	17
Trailer License	19
All of the above	9
Insurance	38
Ownership	23
All other mention	42
Don't Know	4

APPENDIX C/ Survey Questionnaires

DRIVER INTERVIEW

|_|_|_|_|_|
A.R.A. Code

LOCATION: North 1
South 2

1. Type of company:

Private 1
Public 2

2. Type of load:

Bulk 1
Variety 2

TO INTERVIEWER: Identify nature of survey and description of person to be interviewed according to Interviewer Instructions.

SECTION "A": TO BE COMPLETED BY ALL RESPONDENTS

TO INTERVIEWER: As I indicated, we are interested in four types of regulations: mechanical fitness, dimensions, weights and vehicle/driver licensing. I have a number of questions now that deal with these regulations.

3. How well would you say you know the present M.T.C. regulations in each of these areas. (TO INTERVIEWER: indicate response categories).

	VERY WELL	FAIRLY WELL	NOT TOO WELL	NOT AT ALL	DON'T KNOW	NO ANSWER
a) mechanical fitness	1	2	3	4	5	6
b) dimensions	1	2	3	4	5	6
c) weights	1	2	3	4	5	6
d) vehicle licensing	1	2	3	4	5	6
e) driver licensing	1	2	3	4	5	6

4. We are interested in finding out how difficult you feel it is for trucking companies to comply with the M.T.C. regulations in these areas. (TO INTERVIEWER: indicate categories).

	VERY DIFFICULT	SOMEWHAT DIFFICULT	NOT TOO DIFFICULT	NOT DIFFICULT	DON'T KNOW	NO ANSWER
a) Mechanical Fitness	1	2	3	4	5	6
b) Dimensions	1	2	3	4	5	6
c) Weights	1	2	3	4	5	6
d) Vehicle/Driver Licensing	1	2	3	4	5	6
e) Driver Licensing	1	2	3	4	5	

5. Into which category would you say most of the violations you have received while driving a truck in the past two years fall?

Mechanical Fitness 1
Dimensions 2
Weights 3
Vehicle/Driver 4
Other (specify) 5

Don't Know 6
No Answer 7

|_|_|_|_|
A.R.A. Code

SECTION B - DRIVER INTERVIEW
(See Interviewer Instructions)

WEIGHTS

TO INTERVIEWER: Now I have a few questions dealing specifically with the M.T.C. regulations concerning weights.

6. Who would you say actually has the primary responsibility for ensuring that M.T.C. weight regulations are complied with? We are interested in a job title, not a person's name.

TO INTERVIEWER: USE THESE CODES: (DO NOT READ)

Dispatcher	1
Operations Manager	2
Traffic Manager	3
Maintenance Mechanic	4
Maintenance Manager	5
Loading Personnel/Dock Supervisor	6
Driver	7
Licensing Clerk	8
Owner/Manager	9
Shipper	10
Equipment Manager	11
Other (specify)	12
Don't Know	13
No One Responsible	14

6 Primary ______
7 Secondary ______

8. Who do you think should have responsibility for ensuring compliance with M.T.C. weight regulations?

8 Primary ______
9 Secondary ______

10. Are there certain M.T.C. weight regulations that are more difficult than others to comply with?

No, All About The Same	1	GO TO 11
Yes	2	GO TO 10a
Don't Know	3	GO TO 11

10(a) IF YES: Which one is most difficult to comply with?

Gross Vehicle Weight	1
Axle Load Restrictions	2
Other (Specify)	3
Don't Know	4

11. What makes it difficult to comply with M.T.C. licensing regulations?
(DO NOT READ RESPONSE CATEGORIES).

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of M.T.C. Licensing Regulations	1	2	3
b) Difficulties in Judging Necessary Licensing ...	1	2	3
c) Carelessness	1	2	3
d) Forget to Renew Expired License	1	2	3
e) Cost or Time Involved in Getting or Renewing License	1	2	3
f) Relying on For-Hire Carriers	1	2	3
g) Need to Increase Revenue	1	2	3
h) Unable to Check Licensing	1	2	3
i) Poorly Qualified M.T.C. Inspectors	1	2	3
j) Legislation Difficult to Understand	1	2	3
k) Other (specify)			
________________________	1	2	3
________________________	1	2	3
________________________	1	2	3

12-15

We're interested in what the probability is of a truck being inspected at an M.T.C. inspection station during a trip. Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for driver and vehicle licensing regulations at an inspection station in central Ontario during their trip?

(e.g., would you expect 50 out of 100 would actually be inspected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#12 CENTRAL ONTARIO	Q.#13 NORTHERN ONTARIO	Q.#14 MAJOR HIGHWAYS	Q.#15 MINOR HIGHWAYS
# out of 100	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
don't know	9 9 9	9 9 9	9 9 9	9 9 9

16. Does the company or companies you driver for routinely check compliance with licensing regulations before a truck starts on a trip?

Yes, For Driver Only	1
Yes, For Vehicle Only	2
Yes, For Both Driver and Vehicle	3
No	4
Don't Know	5
Not Applicable	6
Other (specify)	7

____

16. Does the facility where you picked up the load for this trip have facilities to check weights before starting a trip?

Yes, For Gross Weight Only 1

Yes, For Axle Weight Only 2

Yes, For Both Axle & Gross Weight 3

No 4

Don't Know 5

Not Applicable 6

Other (specify) 7

____

17-20

We're interested in what the probability is of a weight violation actually being detected during a trip. Assuming 100 trucks on average trips are in violation of the weight regulations, how many trucks out of the 100 would you say are likely to be detected at an inspection station in central Ontario as being in violation of the weight regulations.

(e.g., would you expect 50 out of 100 would actually be detected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#17 CENTRAL ONTARIO	Q.#18 NORTHERN ONTARIO	Q.#19 MAJOR HIGHWAYS	Q.#20 MINOR HIGHWAYS
# out of 100	__ __ __	__ __ __	__ __ __	__ __ __
don't know	9 9 9	9 9 9	9 9 9	9 9 9

21. If weight violations are detected at an M.T.C. inspection station, what kinds of problems does this cause for you or your company? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Fine	1	2	3
Down Time - At Inspection Station	1	2	3
Reputation	1	2	3
Other (specify)			
____________________	1	2	3
____________________	1	2	3
None	1	2	3
Don't Know	1	2	3

22. During the past year, approximately how many times would you say you have been written up by M.T.C. at an inspection station for weight violations?

		Don't Know
a number of times	__ __ __	999

23. What would you say are the main reasons that most violations of weight regulations occur. (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of Weight Limits	1	2	3
b) Lack of Necessary Weighing Equipment	1	2	3
c) Difficulties in Judging Load Distribution	1	2	3
d) Carelessness	1	2	3
e) Incorrect Waybills	1	2	3
f) Lack of Appropriate Vehicle	1	2	3
g) Shippers Requirements	1	2	3
h) Bonded Containers	1	2	3
i) Need to Increase Revenue	1	2	3
j) Shifting Weight Due to Unloading on Route	1	2	3
k) Poorly Qualified M.T.C. Inspectors	1	2	3
l) Legislation Difficult to Understand	1	2	3
m) Other (specify) ________________________	1	2	3

24. What kind of operators do you think most frequently violate weight regulations? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY
a) For-Hire Carriers	1	2
b) Private Truckers	1	2
c) Gypsies	1	2
d) Large Operators	1	2
e) Small Operators	1	2
f) Other (specify) ______________	1	2
g) No General Type	1	2
h) Don't Know	1	2

25. We're interested in how frequently loads are actually in violation of weight regulations, whether or not the violation is actually detected. Once again, assuming 100 trucks on average trips, how many would you think would be in violation of weight regulations?

___ ___ ___

26. What would you say are the main reasons that you or your company try to comply with weight regulations? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTI
Avoid Fines	1	2	3
Avoid Down Time at M.T.C. Inspection Station..	1	2	3
Avoid Record	1	2	3
Avoid Wear and Tear on Vehicles	1	2	3
Safety	1	2	3
Desire to be Law Abiding	1	2	3
Reputation	1	2	3
Other (specify)______________________	1	2	3
Don't Know	1	2	3

27. How much effect would you say the following actions would have in increasing compliance with weight regulations?

	GREATLY INCREASE	SOMEWHAT INCREASE	NO EFFECT	DON'T KNOW
Doubling Costs of Fines	1	2	3	4
Increasing Fines for Repeat Offenses	1	2	3	4
Suspending Licenses of Consistent Offenders	1	2	3	4
Increasing Number of Inspections	1	2	3	4
Changing Hours of Inspection	1	2	3	4
Having More M.T.C. Mobile Inspection Units	1	2	3	4
Changing the M.T.C. Regulations	1	2	3	4
Assisting Truckers in Determining Weights at Time of Loading	1	2	3	4
Clearer Information on M.T.C. Weight Regulations	1	2	3	4
More Available information on M.T.C. Weight Regulations	1	2	3	4
Having Longer Down Time in M.T.C. Inspection Stations	1	2	3	4

28. Would you think that there has been any occasion over the past year that someone in the company or companies you drive for has knowingly decided not to comply with weight regulations on any given load?

Yes 1
No .... 2 | GO TO Q.30
Don't Know .... 3 |

29. IF YES: a) What percentage of the company's weight violations would you think are a result of someone deciding not to comply with the regulations? ___ ___ ___%
IF '0' GO TO 37

b) What would be the main reasons for these types of situations occuring in the company? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Fear of Losing Business (Work) If Refuse a Load	1	2	3
To Increase Revenue	1	2	3
Small Additional Load Not Justifying Additional Truck	1	2	3
Appropriate Vehicle Not Available	1	2	3
Last Minute, Rush Orders	1	2	3
Other (Specify) ________________________ .	1	2	3
Don't Know	1	2	3

30. What are the maximum allowable weights for dual axles based on?

The Distance Between the Two Axles 1

Other 2

Don't Know 3

A.R.A. Code

SECTION B - DRIVER INTERVIEW
(See Interviewer Instructions)

MECHANICAL FITNESS

TO INTERVIEWER: Now I have a few questions dealing specifically with the M.T.C. regulations concerning mechanical fitness.

6. Who would you say actually has the primary responsibility for ensuring that M.T.C. mechanical fitness regulations are complied with? We are interested in a job title, not a person's name.

TO INTERVIEWER: USE THESE CODES: (DO NOT READ)

Dispatcher	1
Operations Manager	2
Traffic Manager	3
Maintenance Mechanic	4
Maintenance Manager	5
Loading Personnel/Dock Supervisor	6
Driver	7
Licensing Clerk	8
Owner/Manager	9
Shipper	10
Equipment Manager	11
Other (specify)	12
Don't Know	13
No One Responsible	14

6 Primary ________
7 Secondary ________

8. Who do you think should have responsibility for ensuring compliance with M.T.C. mechanical fitness regulations?

8 Primary ________
9 Secondary ________

10. Are there certain M.T.C. mechanical fitness regulations that are more difficult than others to comply with?

No, All About The Same	1	GO TO 11
Yes	2	GO TO 10a
Don't Know	3	GO TO 11

10(a) IF YES: Which one is most difficult to comply with?

Brakes	1
Lamps	2
Other (Specify)	4
Don't Know	5

11. What makes it difficult to comply with M.T.C. mechanical fitness regulations? (TO INTERVIEWER: Circle the letters on the left as respondent replies and ask him/her to rank them after responding. Indicate rankings by circling appropriate number). (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of M.T.C. Regulations	1	2	3
b) Lack of Necessary Inspection Equipment	1	2	3
c) Difficulties in Judging Fitness	1	2	3
d) Carelessness	1	2	3
e) Need to Increase Revenue	1	2	3
f) Inconsistent Judgements by M.T.C. Inspectors ..	1	2	3
g) Poorly Qualified M.T.C. Inspectors	1	2	3
h) Legislation Difficult to Understand	1	2	3
i) Other (specify)			
________________________	1	2	3
________________________	1	2	3
________________________	1	2	3

12-15

We're interested in what the probability is of a truck being inspected at an M.T.C. inspection station during a trip. Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for mechanical fitness at an inspection station in central Ontario during their trip?

(e.g., would you expect 50 out of 100 would actually be inspected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#12 CENTRAL ONTARIO	Q.#13 NORTHERN ONTARIO	Q.#14 MAJOR HIGHWAYS	Q.#15 MINOR HIGHWAYS
# out of 100	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
don't know	9 9 9	9 9 9	9 9 9	9 9 9

16. How do the company or companies you drive for ensure that vehicles comply with the M.T.C. mechanical fitness regulations? (DO NOT READ RESPONSE CATEGORIES)

Driver Reports	1
Regular Inspection	2
Interval Maintenance	3
Other (specify) _______________...	4

17-20

We're interested in what the probability is of a mechanical fitness violation actually being detected during a trip. Assuming 100 trucks on average trips are in violation of the fitness regulations, how many trucks out of the 100 would you say are likely to be detected at an inspection station in central Ontario as being in violation of the mechanical fitness regulations.

(e.g., would you expect 50 out of 100 would actually be detected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#17 CENTRAL ONTARIO	Q.#18 NORTHERN ONTARIO	Q.#19 MAJOR HIGHWAYS	Q.#20 MINOR HIGHWAYS
# out of 100	__ __ __	__ __ __	__ __ __	__ __ __
don't know	9 9 9	9 9 9	9 9 9	9 9 9

21. If mechanical fitness violations are detected at an M.T.C. inspection station, what kinds of problems does this cause for you or your company? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Fine	1	2	3
Down Time At Inspection Station	1	2	3
Reputation	1	2	3
Down Time in Repair Shop	1	2	3
Other (specify) ____________________	1	2	3
None	1	2	3
Don't Know	1	2	3

22. During the past year, approximately how many times would you say you have been written up by M.T.C. at an inspection station for mechanical fitness violations?

		Don't Know
a) number of times	__ __ __	999

23. What would you say are the main reasons that most violations of mechanical fitness regulations occur. (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of Mechanical Fitness Regulations	1	2	3
b) Lack of Necessary Inspection Equipment	1	2	3
c) Difficulties in Judging Fitness	1	2	3
d) Carelessness	1	2	3
e) Need to Increase Revenue	1	2	3
f) Inconsistent Judgement by Inspectors	1	2	3
g) Poorly Qualified M.T.C. Inspectors	1	2	3
h) Legislation Difficult to Understand	1	2	3
i) Other (specify) ________________________________	1	2	3
________________________________	1	2	3

24. What kind of operators do you think most frequently violate mechanical fitness regulations? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY
a) For-Hire Carriers	1	2
b) Private Truckers	1	2
c) Gypsies	1	2
d) Large Operators	1	2
e) Small Operators	1	2
f) Other (specify) _______________	1	2
g) No General Type	1	2
h) Don't Know	1	2

25. We're interested in how frequently trucks are actually in violation of mechanical fitness regulations, whether or not the violation is actually detected. Once again, assuming 100 trucks on average trips, how many would you think would be in violation of mechanical fitness regulations?

___ ___ ___

26. What would you say are the main reasons that you or your company try to comply with mechanical fitness regulations? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Avoid Fines	1	2	3
Avoid Down Time at M.T.C. Inspection Station	1	2	3
Avoid Down Time in Repair Shop	1	2	3
Avoid Record	1	2	3
Avoid Breakdown on Road	1	2	3
Safety	1	2	3
Desire to be Law Abiding	1	2	3
Reputation	1	2	3
Other (specify) ________________________________ ...	1	2	3
Don't Know	1	2	3

3

27. How much effect would you say the following actions would have in increasing compliance with M.T.C. mechanical fitness regulations?

	GREATLY INCREASE	SOMEWHAT INCREASE	NO EFFECT	DON'T KNOW
Doubling Costs of Fines	1	2	3	4
Increasing Fines for Repeat Offenses ...	1	2	3	4
Suspending Licenses of Consistent Offenders	1	2	3	4
Increasing Number of Inspections	1	2	3	4
Changing Hours of Inspection	1	2	3	4
Having More M.T.C. Mobile Inpsection Units	1	2	3	4
Changing the Regulations	1	2	3	4
Assisting Truckers in Routine Inspections	1	2	3	4
Clearer Information on M.T.C. Mechanical Fitness Regulations	1	2	3	4
More Available Information on M.T.C. Mechanical Fitness Regulations	1	2	3	4
Having Longer Down Time in M.T.C. Inspection Stations	1	2	3	4

28. Would you think that there has been any occasion over the past two years that someone in the company or companies you drive for has knowingly decided not to comply with mechanical fitness regulations on any given load?

Yes 1
No .... 2 |
Don't Know .... 3 | GO TO Q.30

29. IF YES: a) What percentage of the company's mechanical fitness violations would you think are a result of someone deciding not to comply with the regulations?

___ ___ ___%

b) What would be the main reasons for these types of situations occuring in the company? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Fear of Losing Business if Refuse a Load	1	2	3
To Increase Revenue	1	2	3
Costs of Repairs	1	2	3
Appropriate Vehicle Not Available	1	2	3
Last Minute, Rush Orders	1	2	3
Other (specify)			
______________________________ ..	1	2	3
______________________________ ..	1	2	3
Don't Know	1	2	3

30. Are vehicles required to display a certificate or permit which indicates that inspection requirements and performance standards set by the M.T.C. have been met?

Yes 1
No 2
Don't Know .. 3

A.R.A. Code

SECTION B - DRIVER INTERVIEW
(See Interviewer Instructions)

DIMENSIONS

TO INTERVIEWER: Now I have a few questions dealing specifically with the M.T.C. regulations concerning dimensions.

6. Who would you say actually has the primary responsibility for ensuring that M.T.C. dimension regulations are complied with? We are interested in a job title, not a person's name.

TO INTERVIEWER: USE THESE CODES: (DO NOT READ)

Dispatcher	1
Operations Manager	2
Traffic Manager	3
Maintenance Mechanic	4
Maintenance Manager	5
Loading Personnel/Dock Supervisor	6
Driver	7
Licensing Clerk	8
Owner/Manager	9
Shipper	10
Equipment Manager	11
Other (specify)	12
Don't Know	13
No One Responsible	14

6 Primary ________
7 Secondary ________

8. Who do you think should have responsibility for ensuring compliance with M.T.C. dimension regulations?

8 Primary ________
9 Secondary ________

10. Are there certain M.T.C. dimension regulations that are more difficult than others to comply with?

No, All About The Same	1	GO TO 11
Yes	2	GO TO 10a
Don't Know	3	GO TO 11

10(a) IF YES: Which one is most difficult to comply with?

____

____

____

11. What makes it difficult to comply with M.T.C. dimension regulations? (TO INTERVIEWER: Circle the letters on the left as respondent replies and ask him/her to rank them after responding. Indicate rankings by circling appropriate number). (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of M.T.C. Dimension Regulations	1	2	3
b) Legislation Difficult to Understand	1	2	3
c) Difficulties in Measuring Dimensions	1	2	3
d) Carelessness	1	2	3
e) Equipment Manufacturer's Error	1	2	3
f) Lack of Appropriate Vehicle	1	2	3
g) Shippers Requirements	1	2	3
h) Obtaining Special Permits	1	2	3
i) Need to Increase Revenue	1	2	3
j) Inconsistent Measurement/Inspection Practices .	1	2	3
k) Poorly Qualified M.T.C. Inspectors	1	2	3
l) Other (specify)			
____________________	1	2	3
____________________	1	2	3
____________________	1	2	3

12-15

We're interested in what the probability is of a truck being inspected at an M.T.C. inspection station during a trip. Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for dimensions at an inspection station in central Ontario during their trip?

(e.g., would you expect 50 out of 100 would actually be inspected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#13 CENTRAL ONTARIO	Q.#14 NORTHERN ONTARIO	Q.#15 MAJOR HIGHWAYS	Q.#16 MINOR HIGHWAYS
# out of 100	_ _ _	_ _ _	_ _ _	_ _ _
Don't know	9 9 9	9 9 9	9 9 9	9 9 9

16. Can a vehicle and load be easily checked before starting a trip to make sure it meets M.T.C. dimension regulations?

Yes................................. 1

No 2

Don't Know 3

Not Applicable 4

Other (specify) 5

____

17-20

We're interested in what the probability is of a dimensions violation actually being detected during a trip. Assuming 100 trucks on average trips are in violation of the dimension regulations, how many trucks out of the 100 would you say are likely to be detected at an inspection station in central Ontario as being in violation of the dimensions regulations.

(e.g., would you expect 50 out of 100 would actually be detected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#17 CENTRAL ONTARIO	Q.#18 NORTHERN ONTARIO	Q.#19 MAJOR HIGHWAYS	Q.#20 MINOR HIGHWAYS
# out of 100	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
don't know	9 9 9	9 9 9	9 9 9	9 9 9

21. If dimension violations are detected at an M.T.C. inspection station, what kinds of problems does this cause for you or your company. (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Fine	1	2	3
Down Time at Inspection Station	1	2	3
Reputation	1	2	3
Other (specify)			
____________________	1	2	3
____________________	1	2	3
None	1	2	3
Don't Know	1	2	3

22. During the past year, approximately how many times would you say you have been written up by M.T.C. at an inspection station for dimension violations?

		Don't Know
a) a number of times	___ ___ ___	999

23. What would you say are the main reasons that most violations of dimension regulations occur. (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of Dimension Regulations	1	2	3
b) Legislation Difficult to Understand	1	2	3
c) Difficulties in Measuring Dimensions	1	2	3
d) Carelessness	1	2	3
e) Equipment Manufacturer's Error	1	2	3
f) Lack of Appropriate Vehicle	1	2	3
g) Shippers Requirements	1	2	3
h) Obtaining Special Permits	1	2	3
i) Need to Increase Revenue	1	2	3
j) Inconsistent Measurement/Inspection Practices	1	2	3
k) Poorly Qualified M.T.C. Inspectors	1	2	3
l) Other (specify)			
________________	1	2	3
________________	1	2	3
________________	1	2	3

24. What kind of operators do you think most frequently violate dimension regulations? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY
For-Hire Carriers	1	2
Private Truckers	1	2
Gypsies	1	2
Large Operators	1	2
Small Operators	1	2
Other (specify) ________________	1	2
No General Type	1	2
Don't Know	1	2

25. We're interested in how frequently loads are actually in violation of dimension regulations, whether or not the violation is actually detected. Once again, assuming 100 trucks on average trips, how many would you think would be in violation of dimension regulations?

___ ___ ___

26. What would you say are the main reasons that you or your company try to comply with dimension regulations?

	PRIMARY	SECONDARY	TERTIARY
Avoid Fines	1	2	3
Down Time At M.T.C. Inspection Station	1	2	3
Avoid Record	1	2	3
Safety	1	2	3
Desire to be Law Abiding	1	2	3
Reputation	1	2	3
Other (specify)			
______________________________	1	2	3
______________________________	1	2	3
Don't Know	1	2	3

27. How much effect would you say the following actions would have in increasing compliance with dimension regulations?

	GREATLY INCREASE	SOMEWHAT INCREASE	NO EFFECT	DON'T KNOW
Doubling Costs of Fines	1	2	3	4
Increasing Fines for Repeat Offenses	1	2	3	4
Suspending Licenses of Consistent Offenders	1	2	3	4
Increasing Number of Inspections	1	2	3	4
Changing More Hours of Inspection	1	2	3	4
Having More M.T.C. Mobile Inspection Units	1	2	3	4
Changing the M.T.C. Regulations	1	2	3	4
Assisting Truckers in Determining Dimensions at Time of Loading	1	2	3	4
Clearer Information on M.T.C. Dimension Regulations	1	2	3	4
More Available Information on M.T.C. Dimension Regulations	1	2	3	4
Having Longer Down Time in M.T.C. Inspection Station	1	2	3	4

28. Would you think that there has been any occasion over the past year that someone in the company or companies you drive for has knowingly decided not to comply with dimension regulations on any given load?

Yes 1
No .... 2 | GO TO Q.37
Don't Know .... 3 |

29. IF YES: a) What percentage of the company's dimension violations would you think are a result of someone deciding not to comply with the regulations?

___ ___ ___% IF '0' GO TO 30

b) What would be the main reasons for these types of situations occuring in the company? (DO NOT READ RESPONSE CATEGORIES)

	PRIMARY	SECONDARY	TERTIARY
Fear of Losing Business (Work) if Refuse a Load	1	2	3
To Increase Revenue	1	2	3
Small Additional Load Not Justifying Additional Truck	1	2	3
Appropriate Vehicle Not Available	1	2	3
Last Minute, Rush Orders	1	2	3
Other (specify) ______________________ .	1	2	3
______________________ .	1	2	3
______________________ .	1	2	3
Don't Know	1	2	3

30. What is the maximum allowable width of a load without a special permit?

0.6 Meters or 8 1/2 feet	1
Other	2
Don't Know	3

1-

|_|_|_|_|_|
A.R.A. Code

SECTION B
(See Interviewer Instructions)

DRIVER & VEHICLE LICENSING

TO INTERVIEWER: Now I have a few questions dealing specifically with the M.T.C. regulations concerning driver and vehicle licensing. As I indicated previously, this does not include P.C.V. licensing.

6. Who would you say actually has the primary responsibility for ensuring that M.T.C driver and vehicle licensing regulations are complied with? We are interested in a job title, not a person's name.

TO INTERVIEWER: USE THESE CODES: (DO NOT READ)

Dispatcher	1
Operations Manager	2
Traffic Manager	3
Maintenance Mechanic	4
Maintenance Manager	5
Loading Personnel/Dock Supervisor	6
Driver	7
Licensing Clerk	8
Owner/Manager	9
Shipper	10
Equipment Manager	11
Other (specify)	12
Don't Know	13
No One Responsible	14

6 Primary ________
7 Secondary ________

8. Who do you think should have responsibility for ensuring compliance with M.T.C. driver and vehicle licensing regulations?

8 Primary ________
9 Secondary ________

10. Are there certain M.T.C. driver and vehicle licensing regulations that are more difficult than others to comply with?

No, All About The Same	1	GO TO 11
Yes	2	GO TO 10a
Don't Know	3	GO TO 11

10(a) IF YES: Which one is most difficult to comply with?

Driving Without a Driver's Licence	1
Driving Without the Name of the Owner on the Vehicle	2
Driving Without Correct Plates or Permit Displayed (Reflector)	3
Other (Specify)	4
Don't Know	5

11. What makes it difficult to comply with M.T.C. licensing regulations?
(DO NOT READ RESPONSE CATEGORIES).

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of M.T.C. Licensing Regulations	1	2	3
b) Difficulties in Judging Necessary Licensing ...	1	2	3
c) Carelessness	1	2	3
d) Forget to Renew Expired License	1	2	3
e) Cost or Time Involved in Getting or Renewing License	1	2	3
f) Relying on For-Hire Carriers	1	2	3
g) Need to Increase Revenue	1	2	3
h) Unable to Check Licensing	1	2	3
i) Poorly Qualified M.T.C. Inspectors	1	2	3
j) Legislation Difficult to Understand	1	2	3
k) Other (specify)			
______________________________	1	2	3
______________________________	1	2	3
______________________________	1	2	3

12-15

We're interested in what the probability is of a truck being inspected at an M.T.C. inspection station during a trip. Assuming 100 trucks on average trips, how many trucks out of the 100 would you say are likely to be actually inspected for driver and vehicle licensing regulations at an inspection station in central Ontario during their trip?

(e.g., would you expect 50 out of 100 would actually be inspected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#12 CENTRAL ONTARIO	Q.#13 NORTHERN ONTARIO	Q.#14 MAJOR HIGHWAYS	Q.#15 MINOR HIGHWAYS
# out of 100	_ _ _	_ _ _	_ _ _	_ _ _
don't know	9 9 9	9 9 9	9 9 9	9 9 9

16. Does the company or companies you driver for routinely check compliance with licensing regulations before a truck starts on a trip?

Yes, For Driver Only	1
Yes, For Vehicle Only	2
Yes, For Both Driver and Vehicle	3
No	4
Don't Know	5
Not Applicable	6
Other (specify)	7

____

17-20

We're interested in what the probability is of a driver and vehicle licensing regulation violation actually being detected during a trip. Assuming 100 trucks on average trips are in violation of the licensing regulations, how many trucks out of the 100 would you say are likely to be detected at an inspection station in central Ontario as being in violation of the these regulations.

(e.g., would you expect 50 out of 100 would actually be detected, 20 out of 100, 80 out of 100, etc.). (Circle response).

	Q.#17 CENTRAL ONTARIO	Q.#18 NORTHERN ONTARIO	Q.#19 MAJOR HIGHWAYS	Q.#20 MINOR HIGHWAYS
# out of 100	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
don't know	9 9 9	9 9 9	9 9 9	9 9 9

21. If driver or vehicle licensing violations are detected at an M.T.C. inspection station, what kinds of problems does this cause for you or your company. (DO NOT READ RESPONSE CATEGORIES).

	PRIMARY	SECONDARY	TERTIARY
Fine	1	2	3
Down Time At Inspection Station	1	2	3
Reputation	1	2	3
Suspension or Loss of License	1	2	3
Other (specify)			
________________________ ...	1	2	3
________________________ ...	1	2	3
None	1	2	3
Don't Know	1	2	3

22. During the past year, approximately how many times would you say you have been written up by M.T.C. at an inpsection station for driver or vehicle licinsing violations?

		Don't Know
a) a number of times	___ ___ ___	999

23. What would you say are the main reasons that most violations of driver or vehicle licensing regulations occur. (DO NOT READ RESPONSE CATEGORIES).

	PRIMARY REASON	SECONDARY REASON	TERTIARY REASON
a) Lack of Knowledge of Licencing Regulations	1	2	3
b) Difficulties in Judging Necessary Licensing ...	1	2	3
c) Carelessness	1	2	3
d) Forget to Renew	1	2	3
e) Cost or Time Involved in Getting or Renewing License	1	2	3
f) Relying on For-Hire Carriers	1	2	3
g) Need to Increase Revenue	1	2	3
h) Unable to Check Licensing	1	2	3
i) Poorly Qualified M.T.C. Inspectors	1	2	3
j) Legislation Difficult to Understand	1	2	3
k) Other (specify)			
______________________________	1	2	3
______________________________	1	2	3
______________________________	1	2	3

24. What kind of operators do you think most frequently violate driver and vehicle licensing regulations? (DO NOT READ RESPONSE CATEGORIES).

	PRIMARY	SECONDARY
a) For-Hire Carriers	1	2
b) Private Truckers	1	2
c) Gypsies	1	2
d) Large Operators	1	2
e) Small Operators	1	2
f) Other (specify) ______________	1	2
g) No General Type	1	2
h) Don't Know	1	2

25. We're interested in how frequently loads are actually in violation of driver and vehicle licensing regulations, whether or not the violation is actually detected. Once again, assuming 100 trucks on average trips, how many would you think would be in violation of these regulations?

___ ___ ___

26. What would you say are the main reasons that you or your company try to comply with driver and vehicle licensing regulations?

	PRIMARY	SECONDARY	TERTIARY
Avoid Fines	1	2	3
Avoid Down Time at M.T.C. Inspection Station	1	2	3
Avoid Record	1	2	3
Safety	1	2	3
Desire to be Law Abiding	1	2	3
Reputation	1	2	3
Other (specify)			
______________________	1	2	3
______________________	1	2	3
Don't Know	1	2	3

27. How much effect would you say the following actions would have in increasing compliance with licensing regulations?

	GREATLY INCREASE	SOMEWHAT INCREASE	NO EFFECT	DON'T KNOW
Doubling Costs of Fines	1	2	3	4
Increasing Fines for Repeat Offences	1	2	3	4
Suspending Licenses of Consistent Offenders	1	2	3	4
Increasing Number of Inspections	1	2	3	4
Changing Hours of Inspection	1	2	3	4
Having More M.T.C. Mobile Inspection Units	1	2	3	4
Changing the M.T.C. Regulations	1	2	3	4
Assisting Truckers in Determining Appropriate License	1	2	3	4
Clearer Information on M.T.C. Licensing Regulations	1	2	3	4
More Available Information on M.T.C. Licensing Regulations	1	2	3	4
Having Longer Down Time in M.T.C. Inspection Stations	1	2	3	4

28. Would you think that there has been any occasion over the past year that someone in the company or companies you drive for has knowingly decided not to comply with driver licensing regulations on any given trip?

Yes 1
No 2

29. Would you think that there has been any occasion over the past year that someone in the company or companies you drive for has knowingly decided not to comply with vehicle licensing regulations on any given trip?

Yes 1
No 2

30. IF YES to Q.**27** or Q.**28**: a) What percentage of the company's licensing violations would you think are a result of someone deciding not to comply with the regulations?

___ ___ ___% IF '0' GO TO Q.31

b) What would be the main reasons for these types of situations occuring in the company?

	PRIMARY	SECONDARY	TERTIARY
Fear of Losing Business (Work) if Refuse a Load	1	2	3
To Increase Revenue	1	2	3
Small Additional Load Not Justifying Additional Truck	1	2	3
Appropriate Vehicle Not Available	1	2	3
Last Minute, Rush Orders	1	2	3
Other (specify)			
____ .	1	2	3
____ .	1	2	3
Don't Know	1	2	3

31. What licenses or permits are required to be on board the vehicle? (DO NOT READ RESPONSE CATEGORIES).

P.C.V. License (if required) 1
Driver's License 2
Vehicle License 3
All of the Above 4
Other (specify) ______________________ 5
Don't Know 6

|_|_|_|_|
A.R.A. Code

SECTION C
(To Be Completed by All Respondents)

Now just a few more questions.

Is the vehicle leased?	Yes	1
	No	2
Is the driver leased?	Yes	1
	No	2

Nature of load:

Lumber	1
Stone	2
Steel	3
Chemicals	4
Machinery	5
Petroleum	6
Farm Products	7
General Merchandise	8
Dry Goods	9
Food Stuffs	10
Other (specify)	11

____

How long have you been working in the trucking industry? ___ ___ years.

DATE OF INTERVIEW ____________________

LOCATION OF INTERVIEW

Streetsville	1
Thunder Bay	2
Dryden	3
Putnam	4
Gananoque	5
Gravenhurst	6

INTERVIEWER: ____________________